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Does Earnings Guidance Contribute to Investor Short-Termism?

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Does Earnings Guidance Contribute to Investor Short-Termism?

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Dedication

To my family

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Does Earnings Guidance Contribute to Investor Short-Termism?

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The University of Texas at Austin, 2013

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This study examines whether earnings guidance contributes to investor short-termism – excessive focus on a firm's short term performance and insufficient consideration of its long-term value creation potential. Using an adaptation of Ohlson's (1995) valuation model, I find that investors place significantly higher (lower) weight on short-term (long-term) earnings of quarterly guidance firms than on the corresponding earnings of non-guidance firms. Further tests indicate that the differential weighting cannot be fully explained by measurement errors, earnings properties, risk, or accuracy of analysts' forecasts. For a sample of guidance initiating firms, I find no differential valuations of firm value components before the initiation of guidance, but large differential valuations after guidance initiation. In contrast, for guidance discontinuation firms, I find that investors shift their focus from short-term to long-term earnings after the discontinuation of guidance. Together, the results support critics' claim that quarterly guidance contributes to short-term fixation in the market.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction

The question of whether firms should provide earnings guidance continues to draw heated debate among practitioners and academics. One main concern raised by critics is that providing short-term earnings guidance contributes to investor short-termism – excessive focus on a firm's short term performance and insufficient consideration of its long-term value creation. Fuller and Jensen (2002, 2010), for example, urge executives to stop giving quarterly earnings forecasts, arguing that earnings guidance binds management and fuels the short-term expectations game in the equity market. Similarly, panelists participating in a roundtable discussion sponsored by the CFA Institute and the Business Roundtable Institute for Corporate Ethics cited quarterly earnings guidance as one of the primary causes of investor short-term thinking (e.g., Krehmeyer, Orsagh and Schacht, 2006). More recently, former U.S. Vice President Al Gore and former Goldman Sachs executive David Blood released a white paper explicitly blaming quarterly earnings guidance for investors' overemphasis on short-term earnings and their negligence of long term value (Gore and Blood, 2012). The underlying assumption behind the claims is that investors will focus less on short-term signals if managers do not create expectations for such signals.

Others, however, are doubtful that Wall Street will not create its own short-term expectations absent management's earnings guidance. In fact, a survey of 401 top financial executives (i.e., Graham, Harvey and Rojgopal, 2005) suggests that managers' guidance practices are responding to a preexisting short-term focus in the market rather

than causing it (Miller, 2009). Discussions at the Corporate/Investor Summit also reveal other potential causes of investor short-termism, such as the advent of online trading tools, shifts in taxation policies on capital gains and increasing popularity of speculative funds (Tonello, 2005). Thus, it is unclear whether a company's voluntary disclosure practice plays a role in investors' short-term fixation.

Understanding whether earnings guidance leads to excessive short-term focus is important because short-termism can be detrimental to the welfare of investors and the soundness of the market. Froot, Scharfstein and Stein (1992) show how short-horizon traders can create information inefficiency by "herding" responses to poor quality information unrelated to firms' fundamentals.[1] Investor short-termism can also pressure managers to make suboptimal long-term investment decisions in the form of under- or over-investment (Bebchuk and Stole, 1993; Gigler, Kanodia, Sapra and Venugopalan, 2011).

Following Abarbanell and Bernard (2000) and Bushee (2001), I adapt Ohlson's (1995) residual income model to test investor shortsightedness. Ohlson's model allows a firm's value to be segregated into three components – book value, short-term earnings and long-term value. Using a sample from 2000 to 2009, I estimate a regression of stock price on the three components of firm value and find that investors assign significantly higher (lower) weight to the short-term (long-term) earnings of quarterly guidance firms

[1] Sheila Bair, former Chairperson of the Federal Deposit Insurance Corporation, argues that short-term thinking played a critical role in the recent financial crisis: "Investors systematically over-value short-term payoffs and pass up investment opportunities that could leave them much better off in the longer term. Too much short-term thinking can be very costly. It is a market failure that leads to underinvestment in valuable projects with long payoff periods." (Bair, 2011)

than to the corresponding earnings of non-guidance firms.[2] The differences in weights on both short-term and long-term earnings decline over time and converge close to zero by the end of the sample period.

I repeat the pricing test for *annual* guidance firms and find no valuation differences on the components of firm value between annual guidance firms and control firms, supporting some critics' suggestion that switching from quarterly to annual guidance helps firms steer investor focus away from short-term performance (Krehmeyer, et al., 2006; Chamber of Commerce, 2007).

The choice to provide earnings guidance is endogenous (see Figure 1). While critics contend that guidance induces short-term fixation, it is also possible that managers are acceding to the demand of short-term investors. To establish the direction of causality, I perform two sets of tests. First, I examine the differential price reaction to the components of firm value between quarterly guidance and non-guidance firms before and after guidance firms *initiate* their first earnings guidance. The difference-in-differences test yields no differential valuations of short-term or long-term components of firm value between the two groups of firms before the inception of quarterly guidance, but large differential valuations after the inception of earnings guidance. Second, I investigate the differences in valuation of firm value components between the two groups of firms before and after quarterly guidance firms *stop* issuing guidance. I find that investors shift their focus from short-term to long-term earnings after the

[2] The control firms are formed based on their propensity scores derived from estimating a logistic model with predictors that have been documented to be determinants of providing earnings guidance in prior studies. Specifically, I include the following predictors: firm size, market-to-book, past earnings volatility, past analysts' forecast dispersion and number of analysts following.

discontinuation of guidance. Together, the results support critics' claim that quarterly guidance induces short-term fixation rather than a response to the market's preexisting short-term focus.

While the finding is consistent with myopic pricing, one competing explanation is that short-term earnings of quarterly guidance firms are better indicators of their future earnings than are short-term earnings of non-guidance firms. This is consistent with prior literature that price-earnings relation is correlated with earnings persistence and future earnings growth (Kothari, 2001). Another alternative explanation is that investors respond more strongly to short-term earnings of quarterly guidance firms because they have lower risk (Kothari, 2001). To rule out these competing explanations, I compare earnings persistence, future earnings growth and CAPM beta (proxy for risk) between the two groups of firms, and I find no significant differences. I also find that the results remain robust after controlling for differences in analyst forecast accuracy and after excluding "earnings warnings" management forecasts.

To further confirm that the documented weighting differences are evidence of over- and under-valuation of respective components of firm value, I investigate future price reversals using two approaches. I predict that if the market over- (under-) weights short-term (long-term) earnings of guidance firms, price corrections will occur in the near future. First, I examine stock returns over the two years subsequent to the Value Line forecast dates. I find that one-year-ahead cumulative abnormal returns are more negatively (positively) associated with the short-term (long-term) earnings of guidance firms than with the corresponding earnings of non-guidance firms. The magnitudes of

cumulative abnormal returns decline over time, and the downward trend corresponds with the temporal decline in the differential weighting of short-term and long-term earnings. These results suggest that investors "learn" over time or are responding to the concerns expressed by the critics.

Second, I construct three hedge portfolios that take a long (short) position in firms with high (low) short-term earnings to examine whether negative abnormal returns can be earned over the subsequent months. I form one portfolio for each guidance and non-guidance sample, and one portfolio capturing the difference in the hedge portfolio returns between guidance and non-guidance firms. The analyses yield limited evidence of negative abnormal returns for the guidance sample. However, I find negative abnormal returns in the portfolio that captures the difference in the hedge portfolio returns between the two groups of firms. Taken together, the future-returns tests provide some evidence of price correction.

I also evaluate whether myopic pricing of quarterly guidance firms is a market-wide phenomenon or driven by only a sub-class of investors – namely investors with a short-term investment horizon. At a recent CFA symposium on short-termism, the panelists held different views on who are responsible for fostering market myopia. Some pointed the finger at fund managers, while others blame the investment community in general (CFA Institute, 2008). Bushee (2001) classifies institutional investors into three groups – transient, quai-indexer, and dedicated – based on their investment horizon. Using his classification I find that, relative to non-guidance firms, quarterly guidance firms on average have a slightly larger base of transient investors

(6%) and a slightly higher volume turnover by transient investors (9%). However, subsequent pricing tests show that mispricing of quarterly guidance firms is not more evident among any particular sub-group of investors. These results imply that mispricing is a market-wide phenomenon.

The primary contribution of this study is to inform the debate on the costs and benefits of earnings guidance practice. Extant literature provides abundant evidence on its benefits (see Miller, 2009) but very scarce evidence on the costs. The primary concern of regulatory bodies is that the disclosure practice leads to investor short-termism, which can undermine the soundness of the equity market and thus decrease the competitiveness of the U.S. capital markets in the presence of increasing global competition (e.g., Chamber of Commerce, 2007). While critics repeatedly allege that providing earnings guidance, particularly quarterly earnings guidance, increases the market's tendency to focus on short-term performance, much of the argument is based on their anecdotal evidence and personal experiences. This study directly tests the validity of the claim and adds to the list of consequences of providing management earnings forecasts (see Hirst, Koonce and Venkataraman, 2008).

This study also contributes to the voluntary disclosure literature. Numerous studies examine the effect of the voluntary disclosure on managers' long-term investment and financial reporting behavior. For example, Cheng, et al. (2007) study whether occasional guiders invest more or less in research and development than dedicated guiders; Acito (2010) and Call, Chen, Miao and Tong (2011) examine whether earnings guidance firms are more or less likely to manage earnings than non-

earnings guidance firms. The basic tenet of the arguments behind these studies is that providing earnings guidance encourages investors to focus on short-term performance and it, in turn, pressures managers to act myopically. In other words, the tests conducted are joint tests of investor myopia and management's investing or financial reporting behavior. This study complements prior work by providing empirical evidence that illuminates the underlying link.

The chapters below are organized in the following order: Chapter 2 discusses the related literature and develops the hypotheses; Chapter 3 outlines the research design; Chapter 4 describes the sample and descriptive statistics; Chapter 5 reports the main results; Chapter 6 contains the results from additional and sensitivity analyses; and Chapter 7 concludes the study.

Chapter 2: Motivation, Related Literature and Hypotheses

2.1 Market Short-Termism

The U.S stock market has been criticized for being increasingly obsessed with firms' short term performance and not giving sufficient consideration to long-term value creation. Critics often cite increasing share turnover, shortened executive tenure, management myopia, and investors' exaggerated reaction to quarterly results as indications of short-termism in the capital markets. Surveys and academic studies also lend support to the allegation. For example, Zhang (2011) estimates that short-term trading accounts for more than 75% of the dollar trading volume in 2009.[3] The annual share turnover of companies listed on the New York Stock Exchange has increased monotonically from 50% in 1990 to more than 100% in 2005 (Krehmeyer, et al. 2006). For U.S. portfolio fund managers, the IRRC Institute reports an overall average annual investment turnover of 77% and turnovers greater than 100% for 23% of the managers (IRRC Institute and Mercer, 2010). During a recent conference, Morgan Stanley asked chief investment officers from top asset management firms about their investment time horizon. The survey results reveal that only 20% of the attendees voted for more than one year and 55% voted for a quarter or less (Gore and Blood, 2012).

A survey of 400 executives also shows that 80% of corporate managers are willing to sacrifice investments in research and development to meet short-term earnings targets, and 50% of them would delay new projects even if it meant sacrifices

[3] Zhang (2011) also finds evidence that excessive short-term trading impedes the market's ability to incorporate news about firms' fundamental values into asset prices.

in long-term value creation (Graham et al. 2005). The findings suggest that managers feel pressured by the capital market to manage for the short-term.

Critics attribute market short-termism to firm-level and non-firm-level factors (see discussion in Chapter 2.2). Among the firm-level factors, voluntary disclosure practices receive the strongest criticism. In particular, quarterly earnings guidance is claimed to encourage investors to fixate on short-term earnings. The critics of short-term guidance recommend that corporate managers replace quarterly earnings guidance with more meaningful communication of company strategy and long-term value drivers.

2.2 Debate on Role of Earnings Guidance in Market Short-Termism

Management earnings forecasts (earnings guidance) are voluntary forward-looking statements about a firm's future performance and a vital source of information for investors. Beyer, Cohen, Lys and Walther (2010) document that, in terms of information content, management forecasts outrank all other sources of accounting-based information such as analysts' forecasts, earnings announcements, earnings pre-announcements and SEC filings. Beyer et al. find that management forecasts, on average, account for about 55% of all accounting-based information. In spite of its importance, there is a declining trend in the number of firms providing quarterly earnings guidance over the years. Based on surveys of hundreds of firms, the National Investor Relations Institute finds that the number of quarterly earnings guidance firms has dropped from 75% in 2003, to 61% in2005, to 52% in 2006, and to 27% in 2007, while annual guidance has increased from 16% in 2003, to 28% in 2005, to 43% in

2006 and to 58% in 2007 (Chen, Matsumoto and Rajgopal, 2011). The declining trend in providing quarterly earnings guidance can be partially attributed to the growing criticism made by prominent investors, regulators and academics.

For example, Warren Buffett has long advocated for the abandonment of short-term earnings guidance; he advises investors to focus on a firm's long-term strategies rather than on short-term performance metrics, which often are not reflective of a firm's complexities. William Donaldson, former chairman of Securities and Exchange Commission, expresses a similar view in his comment on the recent global financial crisis:

> I believe the excessive focus by too many corporations on achieving short-term results, fanned by the practice of acceding to demands for regular guidance in forecasting such quarterly results—is certainly one of the root causes of some of the problems we face today…Through its effects on managerial incentives, quarterly earnings guidance plays a prominent role in generating short-term market pressure and a penchant for short-term thinking among both corporate managers and money managers. (Deloitte, 2009, p.12)

Fuller and Jensen (2002, 2010) also make the argument that earnings guidance binds management and fuels the short-term expectations game in the equity market. The U.S. Chamber of Commerce strongly recommends that firms either stop quarterly guidance or switch to annual guidance for similar reasons (Chamber of Commerce, 2007). Most recently, former U.S. Vice President Al Gore and former Goldman Sachs executive David Blood released a white paper (Gore and Blood, 2012) in which they argue that, "Quarterly earnings guidance can create incentives for executives to manage for the short term and encourage some investors to overemphasise the significance of these

measures at the expense of the longer-term, more meaningful measure of sustainable value creation" (p.4).

Similar concerns were voiced by panelists at the 2006 roundtable discussion of market short-termism, an event sponsored by the CFA Institute and the Business Roundtable Institute for Corporate Ethics. The panelists included firms' senior managements, fund managers and senior directors of non-profit investor protection organizations. The consensus was that firms should replace quarterly earnings guidance with disclosure practices that emphasize long-term fundamental values to reduce short-term thinking in the market.

While the critics' messages are loud and clear, not everyone agrees with their contention. This is evident by the number of firms continuing to provide quarterly earnings guidance and the CFA Institute's survey results that show 71% of firms have no preference for quarterly guidance, 24% favor the practice and only 5% oppose it. There are at least two reasons for the skepticism. First, regardless of their earnings guidance practice, firms continue to report mandatory quarterly earnings results and analysts continue to provide predictions of those results. It is unclear whether managers are able to shift the focus of the market from short-term to long-term by simply withholding their forecasts. In fact, Tucker (2007) finds that investors respond more strongly to negative quarterly earnings surprises when firms fail to provide guidance. Further, some prior studies (Chen, et al. 2011; Houston, Lev and Tucker, 2010) do not support the critics' argument that stopping earnings guidance will lead managers to provide more long-term oriented information.

Second, there are many other factors that may cause the market to be short-term oriented. For instance, panelists at the Corporate/Investor Summit hosted by The Conference Board did not cite earnings guidance as a contributing factor to short-termism (Tonello, 2005). Instead, they unanimously agreed that speculative trading is one of the major causes of market myopia. The rise of hedge funds, coupled with the advent of online trading tools, greatly amplifies the amount of short-term trading in the stock market (Zhang, 2011). The participants also argued that market short-termism could be caused by the shift in U.S. taxation policy on capital gains, analysts' analytical training on short-horizon metrics, and changes in the commission rate system for the sell-side analysts.

The preceding discussion leads to an interesting question: given all other contributing factors and the market's ability to form its own short-term expectations, how much of a role does a firm's voluntary disclosure practice play in fostering short-term market operation?

2.3 Related Studies and Hypotheses Development

There are both costs and benefits associated with proving earnings guidance. In addition to containing information content, earnings guidance has been shown in prior studies to have many positive attributes, such as aligning market and managerial expectations (Ajinkya and Gift, 1984), reducing information asymmetry across market participants (Coller and Yohn, 1997) and mitigating post-earnings announcement drift (Li and Tse, 2008). Other perceived benefits of providing earnings guidance include

moderating firms' share price and increasing their stock liquidity by attracting investors and analysts (McKinsey, 2006). The costs, however, are less well-documented in extant literature. Apart from time spent by management and employees, the primary reason behind the call for guidance cessation is that guidance may generate market short-termism by encouraging investors to overemphasize firms' short-term performance (McKinsey, 2006; Miller 2009). There are important implications for having a market that is overly short-term focused. First, theoretical findings in Froot, et al. (1992) suggest that short-horizon traders can create information inefficiency by "herding" poor quality information that is unrelated to the firms' fundamentals. Zhang (2011) provides supporting empirical evidence that excessive short-term trading (in general) hinders the market's ability to incorporate firms' fundamental news into asset prices. Second, investor traders may also pressure managers to invest myopically (trading positive future NPV projects for near-term performance) and report opportunistically (manage earnings).

In spite of the important implications, direct evidence on the relation between earnings guidance and investor short-termism is missing in existing literature. Figure 1 graphically describes the conceptual relations among guidance, investor short-termism and managers' investing and financial reporting decisions. As shown in the figure, earnings guidance may encourage investors to be overly focused on short-term performance, and the overemphasis in turn pressures managers to invest myopically and/or report opportunistically. Prior studies have examined the role of earnings guidance in managers' investing and financial reporting behavior, under the maintained

assumption that guidance contributes to investor myopia. For example, Cheng, et al. (2007) compare research and development expenditures between dedicated and occasional guidance firms and find that dedicated guiders invest significantly less in R&D and are more likely to meet or beat analyst consensus. The findings are consistent with the survey results in Graham, et al. (2005), who find that 80% of the respondents state they would invest less in research and development, advertising, and maintenance in order to meet short-term earnings targets.

Other studies investigate whether managers of guidance firms are more likely to manage earnings to meet/beat their quarterly benchmarks than non-guidance firms. For instance, Kasznik (1999) finds that managers of guidance firms manipulate reported earnings towards their own forecasts. Similarly, Acito (2010) documents that guidance firms recognize large abnormal accruals to beat their own forecasts but not analysts' forecasts, whereas non-guidance firms use abnormal accruals to beat analysts' forecasts. However, Acito finds no difference in the aggregate level of earnings management between the two types of firms; they manage earnings to meet different benchmarks. In contrast, Call, Chen, Miao and Tong (2011) show that guidance firms engage in less earnings management than non-guidance firms. Their results are more consistent with Dutta and Gigler's (2002) theoretical prediction that earnings guidance can deter earnings management by expanding the available set of contractible information to include both forecasted earnings and reported earnings.

In short, prior studies provide only indirect evidence on the relation between earnings guidance and investor shortsightedness. The mixed results, coupled with the

divergent views of market constituents (discussed in the Chapter 2.2) cast doubt on whether guidance contributes to market myopia. Accordingly, I state the first hypothesis in the null form:

> *H1a: Investors do not over- (under-) value short-term (long-term) earnings of quarterly earnings guidance firms more than short-term (long-term) earnings of non-guidance firms.*

I limit H1a to include only quarterly guidance firms because a vast majority of critics accuse it for being the main contributor to short-term thinking. In fact, some critics suggest that switching from quarterly to annual guidance helps reduce or eliminate investor myopia. Given that the trend is to shift the forecast horizon from quarterly to annual, I separately test the effect of annual earnings guidance:

> *H1b: Investors do not over- (under-) value short-term (long-term) earnings of annual earnings guidance firms more than short-term (long-term) earnings of non-guidance firms.*

If the results support the allegation that earnings guidance leads to excessive short-term focus, then a natural question arises: Is the phenomenon driven by the market as a whole or by only a sub-set of investors, such as those with a short investment horizon? Bushee (1998) categorizes a firm's institutional owners into three types: transient, quasi-index and dedicated. The transient institutions represent the group that has a high volume turnover and is very sensitive to earnings news; the quasi-index institutions consist of those with low turnover and relatively low trading sensitivity to

earnings news; and the dedicated institutions are the group that exhibits mostly buy-and-hold strategies. Bushee (2001) documents two important findings. First, he finds that transient investors have a preference for firms with more near-term earnings over firms with more long-run value. Second, high levels of transient ownership are associated with an over- (under-) valuation of short-term (long-term) expected earnings. These results suggest that transient investors overemphasize a set of information that is not related to the firms' fundamental value. Thus, it is plausible that transient investors are more attracted to guidance firms because management's short-term earnings forecasts facilitate their short-term trading strategies and the larger transient ownership aggravates the myopic pricing. I formalize the hypothesis in the alternative form:

> *H2: The over- (under-) valuation of short-term (long-term) earnings of guidance firms is more pronounced when guidance firms have a larger base of transient institutional investors.*

A finding of no results for H2 implies that the myopic mispricing is more likely a market-wide phenomenon.

Chapter 3: Research Methodology and Variable Construction

3.1 Price Reaction Test

I utilize an adaption of Ohlson's (1995) residual income model (also see Abarbanell and Bernard, 2000; Bushee, 2001; hereafter AB and Bushee) to examine the differences in investors' pricing reaction to the short-term and long-term expected earnings of guidance firms and the corresponding earnings of non-guidance firms.[4] The model decomposes a firm's equity into two components – book value and future abnormal earnings:

$$P_t = bv_t + \sum_{\tau=1}^{\infty}(1+r)^{-\tau}\ \mathrm{E_t}(x_{t+\tau} - r * bv_{t+\tau-1}) \qquad (1),$$

where P_t is the equity price at time t, bv_t is the book value at time t, r is the discount rate and $x_{t+\tau}$ is the earnings at time t+τ. The firm-specific discount rate is derived from the capital asset pricing model (CAPM) using firm-specific betas with an assumed risk premium over the risk-free rate of 7%.[5] The book value component represents the portion of firm value that has been recorded by the accounting system. The last component of the equation is the expected future abnormal earnings, calculated as the expectation of the difference between earnings and prior book value times a required rate of return.

[4] AB argue that while clean surplus may not be representative of firms' actual accounting system, it still provides a sound structure for valuation purposes.

[5] See Chapter 3.6 for more detailed descriptions of Value Line dataset and the calculations of firm specific risk and firm value components.

The earnings component can be further segregated into short-term and long-term. The Value Line dataset provides forecasts of book value, earnings and implicit value of price up to four years ahead, and these forecasts are used as proxies for market expectations. Following prior studies, I define the short-term component as one-year-ahead expected abnormal earnings and the long-term component as the sum of all expected abnormal earnings beyond the one-year horizon. Note that by re-arranging Equation (1), a firm's price-to-book value at any given time *t* can be expressed in the follow form:

$$\mathrm{E_t}(P_{t+T} - bv_{t+T}) = \sum_{\tau=T+1}^{\infty} (1+r)^{-\tau}\ \mathrm{E_t}(x_{t+\tau} - r * bv_{t+\tau-1}) \qquad (2).$$

Equation (2) is useful because it allows Value Line analysts' forecast of implicit price at *T=4* to proxy for all expected abnormal earnings beyond *T=4* (or terminal value). Substituting Equation (2) into Equation (1) yields the following equation:

$$\begin{aligned} P_t \ &= \ bv_t + (1+r)^{-1}\ \mathrm{E_t}(x_{t+1} - r * bv_t) \\ &\quad + \sum_{\tau=2}^{4} (1+r)^{-\tau}\ \mathrm{E_t}(x_{t+\tau} - r * bv_{t+\tau-1}) + (1\ +\ r)^{-4}\ \mathrm{E_t}(P_{t+4} - bv_{t+4}) \\ &= \ BV_t \ +\ PVAX_t \ +\ PVTV_t \qquad (3), \end{aligned}$$

where BV_t is the book value at time t, $PVAX_t$ is the present value of forecasted one-year-ahead abnormal earnings, and $PVTV_t$ is the present value of all forecasted abnormal earnings beyond the one-year horizon.

Equation (3) can further be written in a regression form:

$$P_t = \alpha_0 + a_1 BV_t + a_2 PVAX_t + a_3 PVTV_t + \eta_t \quad (4).$$

The a_1 coefficient captures market pricing of the firm's book value – the portion of firm value that has been captured by the accounting system, and a_2 and a_3 capture market pricing of expected short-term and long-term earnings, respectively. That is, since *PVAX* and *PVTV* are discounted values, a one dollar increase in expected short-term or long-term abnormal earnings should only increase price by a dollar. Market efficiency predicts that $a_1 = a_2 = a_3 = 1$ and $a_0 = 0$. This condition requires that the valuation model is complete and the components are measured without error. Since *PVAX* and *PVTV* are likely measured with error, their coefficients are likely to deviate from the theoretical value of one.[6] The price, P_t, on the left hand side of Equation (4) is the observed actual price, and it can deviate from the theoretical price implied by the right hand side if investors over- or under-weight the components of firm value.

To test H1a and H1b, I add an indicator variable, *GUIDE*, to the base model to capture the differential effect between guidance and non-guidance firms:

$$P_t = b_0 + b_1 BV_t + b_2 PVAX_t + b_3 PVTV_t + b_4 GUIDE_t + b_5 (GUIDE * BV)_t + b_6 (GUIDE * PVAX)_t + b_7 (GUIDE * PVTV)_t + \epsilon_t \quad (5),$$

where *GUIDE* equals one if the firm provides earnings guidance for the period and zero otherwise. The coefficients, b_2 and b_3, represent the weights investors place on expected short-term and long-term earnings of non-guidance firms, respectively. The

[6] In Chapter 6 I explain the implications of measurement errors and methodologies to mitigate the potential effect.

non-guidance firms serve as the baseline control group (see Chapter 3.5 for formation of the control sample). The model suggests that if providing earnings guidance contributes to market short-termism, then: $b_6 > 0$ and $b_7 < 0$. In other words, the weight investors place on the short-term (long-term) earnings of guidance firms is significantly higher (lower) than the theoretical value predicted by the model, relative to the weight placed on the corresponding earnings of non-guidance firms.

Equation (5) is estimated yearly for quarterly and annual guidance firms, respectively.[7] The firm value components are measured approximately at mid-fiscal year, when the second Value Line analyst report for each firm-year is released (see Chapter 3.6 for construction of the variables), and P_t is the share price on the date the firm value components are measured. The coefficients of each variable are averaged across the sample period, and the t-tests of the coefficients are based on the distribution of the yearly coefficients, adjusted for serial correlation using Newey-West methodology.

3.2 Differences in Valuation before and after Inception of Guidance

The choice to provide earnings guidance is endogenous (see Figure 1). While critics argue that guidance induces market myopia, it is also possible that managers are acceding to the demand of short-term investors. To test for the direction of causality, I examine the differential price reaction to the components of firm value between

[7] There are three types of earnings guidance firms: 1) firms who provide guidance for their annual performance, 2) firms who provide guidance for quarterly performance, and 3) firms who provide guidance for both quarterly and annual performance. I define the first type as Annual Guidance firms and the second and third types as Quarterly Guidance firms.

quarterly guidance and non-guidance firms before and after guidance firms initiate their first earnings guidance. Specially, I estimate the following difference-in-differences (DID) regression model:

$$\begin{aligned} P_t = {} & a_0 + b_1 BV_t + b_2 PVAX_t + b_3 PVTV_t + b_4 GUIDE_t + b_5 (GUIDE * BV)_t \\ & + b_6 (GUIDE * PVAX)_t + b_7 (GUIDE * PVTV)_t + b_8 POST_t \\ & + b_9 (POST * BV)_t + b_{10} (POST * PVAX)_t + b_{11} (POST * PVTV)_t \\ & + b_{12} (POST * GUIDE)_t + b_{13} (POST * GUIDE * BV)_t \\ & + b_{14} (POST * GUIDE * PVAX)_t + b_{15} (POST * GUIDE * PVTV)_t + \varepsilon_t \end{aligned} \quad (6a),$$

where *POST* is an indicator variable that equals zero (one) for the period two years before (after) firms give their first earnings guidance. I define guidance initiation year as the first year that a firm appears in the guidance dataset. All other variables are defined in Appendix.

If quarterly earnings guidance induces investor myopia, then there should be a zero (significant) valuation difference between the two groups in the pre- (post-) guidance period, that is, $b_6 = b_7 = 0$ in the pre-guidance period and $b_{14} > 0$ and $b_{15} < 0$ in the post-guidance period. On the contrary, if quarterly guidance is managers' response to a preexisting short-term condition in the market, then there should be some valuation differences between the two groups in the pre-guidance period and larger valuation differences in the post-guidance period. The latter set of results would support the argument that investors *were* short-term focused and demanded short-term information from management, and mangers accede to giving guidance, thereby exacerbating the short-term fixation.

3.3 Differences in Valuation before and after Discontinuation of Guidance

To supplement the test in the preceding subchapter, I also investigate the change in valuation difference before and after firms stop quarterly earnings guidance:

$$\begin{aligned} P_t = {} & a_0 + b_1 BV_t + b_2 PVAX_t + b_3 PVTV_t + b_4 GUIDE_t + b_5 (GUIDE * BV)_t \\ & + b_6 (GUIDE * PVAX)_t + b_7 (GUIDE * PVTV)_t + b_8 POST_t \\ & + b_9 (POST * BV)_t + b_{10} (POST * PVAX)_t + b_{11} (POST * PVTV)_t \\ & + b_{12} (POST * GUIDE)_t + b_{13} (POST * GUIDE * BV)_t \\ & + b_{14} (POST * GUIDE * PVAX)_t + b_{15} (POST * GUIDE * PVTV)_t + \varepsilon_t \end{aligned} \quad (6b),$$

where *POST* is an indicator variable that equals zero (one) for the year before (after) firms stop their quarterly guidance. I define guidance discontinuation year as the last year a firm is recorded in the guidance dataset, and it continues to exist in other datasets such as Compustat. All other variables are defined in Appendix.

If quarterly earnings guidance is responsible for generating excessive short-term focus in the market, then we should observe that myopic pricing exists when guidance firms provides earnings guidance and disappears when the firms discontinue the guidance practice, i.e., $b_6 > 0$ and $b_7 < 0$ in the pre-discontinuation period and b_{14} = b_{15} = 0 in the post-discontinuation period.

3.4 Effect of Different Types of Institutional Owners

The myopic pricing of guidance firms, if it exists, could be a market-wide phenomenon or driven by only certain type(s) of investors. Given that institutional investors are price-setters, I investigate whether mispricing of guidance firms only

exists or is more pronounced when the firm has a larger base of certain type(s) of institutional ownership. Bushee (1998) suggests that institutional investors are a heterogeneous group. Using cluster analysis, Bushee classifies institutional investors into three categories: transient, quasi-index, and dedicated. The transient owners represent the group that has a high volume turnover and is very sensitive to earnings news; the quasi-index owners consist of those with low turnover and relatively low trading sensitivity to earnings news; and the dedicated owners are the group the exhibits mostly buy-and-hold strategies. Given that transient investors have shorter investment horizons, it is plausible that they are attracted to firms who provide more short-term earnings information and the larger transient ownership aggravates the mispricing.

To test the hypothesis, I add an institutional ownership variable, *INST*, to the price reaction test model (Equation (5)):

$$\begin{aligned} P_t = {} & a_0 + b_1 BV_t + b_2 PVAX_t + b_3 PVTV_t + b_4 GUIDE_t + b_5 (GUIDE * BV)_t \\ & + b_6 (GUIDE * PVAX)_t + b_7 (GUIDE * PVTV)_t + b_8 INST_t \\ & + b_9 (INST * BV)_t + b_{10} (INST * PVAX)_t + b_{11} (INST * PVTV)_t \\ & + b_{12} (INST * GUIDE)_t + b_{13} (INST * GUIDE * BV)_t \\ & + b_{14} (INST * GUIDE * PVAX)_t + b_{15} (INST * GUIDE * PVTV)_t + \varepsilon_t \end{aligned} \quad (7),$$

where *INST*, is an indicator variable that equals one if the firm's institutional ownership of a given type is greater than the median value and zero otherwise. *INST=TRA_HOLD* represents holdings by the transient group; *INST=QIX_HOLD* represents holdings by the quasi-index group; *INST=DED_HOLD* represents holdings by the dedicated group; and *INST=ALL_HOLD* represents holdings by all types of institutional investors.

Equation (7) is estimated for each of the investor groups. All other variables are previously defined. The three-way interaction model suggests that if a given type of institutional investors exacerbates the over- (under-) valuation of short-term (long-term) earnings, then b_{14}> 0 and b_{15}< 0.

3.5 Formation of Control Sample

Prior research suggests that firms' decision to issue earnings guidance is an endogenous choice influenced by many firm characteristics and the environment in which they operate. For example, Hutton (2005) finds that a firm is more likely to issue earnings guidance when the firm is followed by more analysts, has higher market-to-book ratio and has earnings that are more difficult to predict. Tuna and Wysocki (2006) document that earnings guidance is more likely when analysts' forecast dispersion is low. To control for potential influence of these factors on investors' firm valuation, I match guidance firms with non-guidance firms based on the propensity scores derived from estimating the following logistic model:[8]

$$Prob\ (GUIDE_t = 1) = F(\gamma_0 + \gamma_1 SIZE_{t-1} + \gamma_2 M2B_{t-1} + \gamma_3 EARN\_STD_t + \gamma_4 NANALYSTS_{t-1} + \gamma_5 AF\_DISPER_{t-1}) + \mu_t \quad (8),$$

where $SIZE_{t-1}$ = natural log of a firm's market capitalization at year t-1, $M2B_{t-1}$ = natural log of a firm's market-to-book ratio at year t-1, $EARN\_STD_t$ = earnings volatility over the past 12 quarters, with a minimum of eight available quarters, $NANALYSTS_{t-1}$ =

[8] The control firms are matched, with replacement, to the guidance firms on a one-to-one basis. The results from the logistic regressions are reported in Table 16.

number of analysts following the firm in the last quarter of year t-1, and AF_DISPER_{t-1} = analysts' forecast dispersion in the last quarter of year t-1.[9] Equation (8) is estimated yearly and the control firms are matched to the guidance firms based on the closest propensity score.

3.6 Value Line and Construction of Firm Value Components

The Value Line data files contain analyst's forecasts of earnings, book value and implicit price for the next fiscal year, the year after, and a long-range period labeled "three-to-five years" ahead. Consistent with AB and Bushee, I define the "three-to-five years" forecasts as forecasts for four years ahead. The three-years-ahead forecast is obtained by interpolating between the two-years-ahead and four-years-ahead forecasts. With availability of these forecasts from one to four years ahead, I construct firms' short-term and long-term value components. Specifically, I define a firm's short-term value component as the difference between the forecasted one-year-ahead earnings and the forecasted one-year-ahead book value, discounted to the present period. Value Line publishes four forecasts for a given year and the second forecast is chosen for the purpose of calculating the variables. Since the second forecast is made around midway through the year, the short-term value component is discounted to the present period for the number of remaining months until the year-end. For example, if a firm's first Value Line forecast is made in June and has a fiscal year-end of December, then its short-term value component is discounted for about six months.

[9] The Value Line analyst forecasts are made by one analyst. Since the variables – *NANALYSTS* and *AF_DISPER* – require more than one analyst forecast, they are calculated using the IBES data files.

I define a firm's expected long-term value component as follows: First, I calculate the expected terminal value (share price at T=4) by multiplying the forecasted four-year-ahead P/E ratio by the forecasted four-year-ahead earnings. Next, I subtract the expected book value four years ahead from the expected terminal value to obtain the firm's expected abnormal earnings beyond T=4. Then, I add this calculated value to the sum of abnormal earnings from one to four years ahead to arrive at the long-term value component. Finally, the long-term value component is discounted to the present period using the same methodology as the short-term value component. Figure 2 provides a timeline illustrating the approximate timing of Value Line forecasts in relation to the timing of management earnings forecasts.

The firm-specific discount rate used to discount short-term and long-term values is calculated using the capital asset pricing model (CAPM); the discount rate equals risk-free rate, plus beta times an assumed market risk of 7%. The firm-specific beta for each period is provided in Value Line database, and is derived from a regression analysis between weekly percent changes in the price of a stock and weekly percent changes in the New York Stock Exchange Composite Index over a period of five years. The betas are adjusted for dividends, stock-splits and time-trend. The risk-free rate for a given period is proxied by the U.S. Treasury Security yield for the corresponding time horizon.

Chapter 4: Sample and Descriptive Statistics

4.1 Sample

Table 1 outlines the sample selection procedures. First, I include all firm-years between 1993 and 2009 in the COMPUSTAT dataset. The sample begins in 1993 because the Thomson Reuters Earnings Guidance dataset starts in 1994 and the extra year is needed to calculate lagged values of variables. After trimming firms with missing accounting data in the sample year or without earnings data for the prior minimum of past eight quarters, the sample contains 91,587 firm-years. Second, I merge the COMPUSTAT sample with IBES data to obtain analyst forecast variables. The matching keeps 46,328 firm-years with non-missing analyst forecast data items. Third, I merge the resulting sample with the Thomson Reuters Institutional Holdings dataset and with Bushee's institutional investor classification dataset to acquire trading volume, holdings of institutional investors and institutional investor type. Institutional managers with more than $100 million in Asset Under Management are required to file with the SEC and report their quarterly holdings and transactions. The remaining sample contains 37,538 firm-years.[10]

Fourth, I add Value Line analysts' forecasts of future firm value components to the sample. Value Line dataset provides forecasts of firms' book value, earnings-per-share and implicit stock price up to four-years ahead. I also require the observations to

[10] The institutional investor classification data is available on Professor Bushee's academic website: http://acct3.wharton.upenn.edu/faculty/bushee/IIclass.html.

have non-missing stock prices from the Center for Research in Security Prices for the Value Line forecast dates, retaining 19,261 firm-years. Lastly, I add management earnings forecasts to the sample, and the final sample contains 4,559 firm-years with quarterly management earnings forecasts and 2,142 firm-years with annual management earnings forecasts. The final sample period begins in 2000 because, after deleting firm-years with missing data items, the annual samples prior to that all have less than 20 observations. Including these small annual samples may introduce large noise into the regression estimations.[11] Panel B of Table 1 reports the distribution of firm-years, including the matching control firms, over the sample period.

4.2 Descriptive Statistics

Table 2 provides descriptive statistics of the key variables and the results from univariate tests of differences between the variables for guidance and non-guidance firms.[12] The average share price for guidance firms is about $33.32, suggesting that these are likely large size firms. Subsequent tests reveal that about 77% of guidance firms have market capitalization greater than or equal to the centile of all firms listed on NYSE, AMEX and NASDAQ. The high percentage of large firms is partially due to the data item requirements throughout the sample formation procedures. The guidance firms' average book value, short-term earnings and long-term earnings are $12.24,

[11] Regulation Fair Disclosure (Reg FD) was passed in 2000. Before the SEC adopted Reg FD, companies were allowed to selectively disclose material nonpublic information to certain individuals or entities. Therefore, one benefit of excluding firm-years before 2000 is that it mitigates the concern that non-guidance firms provided "guidance" to investors through different channels other than the formal earnings guidance.

[12] A review of the distribution of each firm value component shows that there are extreme values. Thus, I winsorize the top and bottom 1% of *BV*, *PVAX* and *PVTV*. I also require firms to have a share price of $2 or higher.

$0.44 and $23.49, respectively. The sum of the three firm value components is $36.17, slightly higher than their average price of $33.32. The small difference suggests that Ohlson's model, fitted with Value Line analysts' forecasts, provides a reasonably sound structure for firm valuation. Unsurprisingly, the short-short earnings component is only a small portion (1.2%=$0.44/$36.17) of projected firm value. T-tests show that guidance firms' prices and their components are not economically different from those of control firms.

The table also shows that institutional investors own about 85% (74%) of guidance firms' (non-guidance firms') shares. Guidance firms have significantly higher trading volume than non-guidance firms (101% versus 81%). The differences in holdings and volume are accounted for by the larger bases and trading volume of transient and quasi-index investors among guidance firms. Since guidance and non-guidance firms are matched based their propensity scores, differences should not exist in the variables used to predict the scores. As expected, values of the control variables – *EARN_STD, SIZE, M2B, NANALYSTS* and *AF_DISPER* – are very similar between the two groups of firms.

Table 3 reports the results from correlation analyses. The top half of the table contains Spearman correlations and the bottom half shows Pearson correlations. In both samples, the correlation between *PVAX* and *PVTV* is highly positive, indicating that higher short-term earnings do not translate into lower forecasts of future performance. Institutional holdings (*ALL_HOLD*) is most highly correlated with transient trading volume (*TRA_VOL*) and least correlated with dedicated trading volume (*DED_VOL*),

suggesting that institutional ownership generates disproportionately large amount of short-term trading. The control variables, particularly *SIZE* and *M2B*, are correlated with price (*P*) and its components. Thus, controlling for these covariates helps reduce omitted variable bias in subsequent multivariate tests.

Chapter 5: Main Results

5.1 Evidence of Differential Valuation

Table 4 reports the results from the price-level test. The left columns show the results for annual guidance firms and the right columns present the results for quarterly guidance firms. The regressions are estimated yearly and the coefficients presented are the mean coefficients across the sample period. The *p*-values are two-tailed and are based on a standard error calculated from the distribution of those yearly coefficients, adjusted for serial correlation using Newey-West methodology.

The intercepts of both groups deviate from the theoretical value of zero, indicating that the firm value components are measured with error or that the parsimonious model is not complete. The coefficient on *BV* (b_1) represents the effect of book value on share price for the control firms and is slightly higher than the predicted value of one. Regardless of the cause of deviation from the theoretical values, the coefficients on the firm value components of non-guidance firms can serve as the baseline benchmarks against which the coefficients of guidance firms are compared (Bushee, 2001). The main variables of interest in the table are *GUIDE*PVAX* and *GUIDE*PVTV*. The coefficients (b_6 and b_7) on the interaction terms capture the *incremental* effect of guidance firms on the relation between price (*P*) and the future earnings components. For the annual guidance group, the coefficients are 0.69 and -0.025, respectively, but they are not statistically significant at the 10 percent level. This finding supports the null hypothesis (H1b) and some critics' claim that annual earnings

guidance does not induce investor shortsightedness. For the quarterly guidance sample, b_6 and b_7 are 1.45 and -0.25, respectively, and they are statistically significant at the five percent level. The result shows that investors place much higher (lower) weight on the short-term (long-term) earnings of quarterly guidance firms than on the corresponding earnings of control firms, a finding that rejects H1a. Since I fail to reject the null hypothesis for the annual guidance group, subsequent tests are only conducted for the quarterly guidance sample.

Figure 3 reveals the temporal patterns in the magnitudes of b_6 and b_7 (column 8 of Table 4) over the sample period. The top graph represents the three-year moving averages of b_6 (overvaluation of short-term earnings of quarterly guidance firms), and the bottom graph captures the moving averages of b_7 (undervaluation of long-term earnings of quarterly guidance firms). Interestingly, the graphs show a steady decline (increase) in investors' overvaluation (undervaluation) of short-term (long-term) earnings. The averages of both coefficients converge close to zero by the end of the sample period, suggesting that investors learn over time or are responding to the concerns expressed by the critics.

One possible explanation for differences in the results between the annual and quarterly guidance samples is the difference in sample size between the two samples. For example, the average annual sample size of quarterly guidance firms is more than twice as large as that of annual guidance firms. Thus, a larger sample size of quarterly guidance firms may contribute to the finding of statistically significant coefficients on their firm value components. To investigate the possibility, I reconstruct a reduced

quarterly guidance sample by randomly selecting a number of quarterly guidance firms each year that equals to the number of annual guidance firms. The results in Table 5 show that b_6 and b_7 remain statistically significant, suggesting that the results of quarterly guidance firms are not primarily driven by the difference in sample size.

5.2 Direction of Causality

Table 6 contains results of the guidance initiation test. The coefficients shown in column three represent the weights on the firm value components of guidance and control firms before guidance firms initiate the first quarterly earnings guidance. Of special interest are the coefficients on *GUIDE*PVAX* (b_6) and *GUIDE*PVTV* (b_7), which capture the differential valuation of short-term and long-term firm value components, respectively. As the table indicates, both coefficients are not statistically different from zero at the 10 percent level, suggesting that there is no differential weighting of firm value components before guidance firm begin issuing earnings forecast. Column five reports the differential valuation of firm value components after guidance firms have issued the first earnings guidance. The incremental weight on the short-term earnings of guidance firms increases from 0.560 before the issuance of guidance to 3.774 after the guidance, while the incremental weight on their long-term earnings decreases from -0.054 to -0.241. The differences in the incremental weight across the pre and post periods are captured by b_{14} and b_{15} and are reported in column six. The coefficients are 3.214 and -0.187, respectively, and they are statistically significant at the 10 percent threshold.

To triangulate the guidance initiation test, I investigate the change in differential valuation after firms permanently discontinue the guidance practice. Column three of Table 7 contains the parameter estimates for the guidance and control firms before guidance firms discontinue quarterly earnings guidance. The coefficients on *GUIDE*PVAX* (b_6) and *GUIDE PVTV* (b_7) are 1.163 and -0.156, respectively. Consistent with the results documented in Table 4, the coefficients suggest that investors assign higher (lower) weight on the short-term (long-term) earnings of guidance firms than on the corresponding earnings of the control firms. However, when firms stop providing guidance I find opposite results, that is, investor assign lower (higher) weight on the short-term (long-term) earnings of guidance firms. The coefficient b_6 decreases to -1.800 and b_7 increases to 0.227, indicating that investors redirect their attention from short-term to long-term when quarterly guidance is discontinued. The differences in the differential weight across the pre and post periods are reported in column six. The coefficients on *POST*GUIDE*PVAX* and *POST*GUIDE*PVTV* are -2.962 and 0.384, respectively, and they are statistically significant at the five percent level. Taken together, the guidance initiation and discontinuation tests suggest that quarterly earnings guidance induces myopic pricing of guidance firms, rather than a response to the existing demand from short-term investors.

5.3 Effect of Institutional Investors on Myopic Pricing

Table 8 reports the multivariate results from estimating Equation (7). The regression analysis is based on the price-level model (Equation (5)), with the addition of

an indicator variable for the specific type of institutional investors. The variable, *INST*, equals one if the firm's institutional ownership of a given type is greater than the median value and zero otherwise. The results in columns three, four and five pertain to transient, quasi-index and dedicated institutional investors, respectively. Column six contains the results for total institutional ownership – the sum of all three types. The regressions are estimated yearly and the coefficients presented are the mean coefficients across the sample period. The *p*-values are two-tailed and are based on a standard error calculated from the distribution of those yearly coefficients, adjusted for serial correlation using Newey-West methodology.

The coefficients on *GUIDE*PVAX* and *GUIDE*PVTV* capture the incremental weights on the respective firm value components for firms whose specified type of institutional investors is below the median. Both coefficients are statistically significant when the indicator variable is transient, quasi-index, or all types of institutional investors. The results suggest that myopic pricing exists even when the firms have low transient institutional investors. The primary variables of interest are the three-way interaction terms, *INST*GUIDE*PVAX* and *INST*GUIDE*PVTV*, which capture the incremental effect of the specific type of institutional ownership on the relation between quarterly guidance and the firm value components. For example, a positive (negative) coefficient on *INST*GUIDE*PVAX* would suggest that having a larger base of the given type of institution investors exacerbates (reduces) the overvaluation of quarterly guidance firms. For transient investors, b_{14} and b_{15} are directionally inconsistent with H2, but they are not statistically significant at the 10 percent level. Thus, the results fail

to reject the hypothesis. Additional tests on quasi-index, dedicated and total institutional investors yield similar results.

As a form of sensitivity test, I also estimate Equation (7) with 1) *INST* being a continuous variable and 2) decile-ranked *INST* that equals one if the institutional ownership of a given type is in the top decile and zero otherwise. The results (not reported) remain qualitatively unchanged. Taken together, the findings suggest that myopic pricing of quarterly guidance firms are not limited to transient or any other group of institutional investors; rather, it is a market-wide phenomenon.

Chapter 6: Alternative Explanations and Robustness Tests

6.1 Measurement Errors and Future-returns Test

AB suggest that the evidence of myopic pricing documented in Equation (5) could be an artifact of two potential forms of measurements error: error in the estimation of discount rates and error in expectations of firm value components. Discount rates are estimated using the capital asset pricing model (CAPM) and are assumed to be constant over time. To the extent that the rates have an upward-sloping term structure, the estimate of the discounted long term component would be overstated, leading to a downward bias on the coefficient b_3. However, AB also show that only an extreme error in the term structure can have a significant impact on the coefficients.[13]

It's also worth noting that this study examines the *differential* valuation of the firm value components. Provided that the level of measurement errors is similar between the two groups of firms, the comparison results remain unbiased. Thus, for the discount rate error to bias the coefficients b_6 and b_7 in Equation (5), it must be the case that the term structures are very different between the two groups of firms. Given that the treatment and control firms are matched on several dimensions it is unlikely that the results are driven by error in the discount rates.[14]

[13] I also re-estimate the regression analyses using 5% or 9% assumed market risk and find that results remain qualitatively unchanged.

[14] The results in Table 15 (discussed in Chapter 6.5) also show that there is only a small difference in CAPM beta. Since the discount rate is calculated as the risk-free rate, plus beta times an assumed market, a small difference in beta produces only an insignificant difference in the discount rate.

The second form of measurement error relates to error in the measurement of firm value components. The measurement error could explain the documented differential valuation if the error is significantly different between the treatment and control firms. I present more in-depth analyses of this possibility in Chapter 6.3.

To mitigate the measurement error concerns, I conduct a future-returns test to investigate whether buy-and-hold abnormal returns of guidance firms over t+1 and t+2 are negatively (positively) associated with their current short-term (long-term) earnings. AB argue that if the results are not an artifact of measurement errors then mispricing should subsequently reverse when future earnings are realized (or when long-term earnings become short-term earnings).

I perform the future-returns test by estimating the following regression model:

$$\begin{aligned} CAR(I)_t = {} & b_0 + b_1 BVC_t + b_2 PVAXC_t + b_3 PVTVC_t + b_4 GUIDE_t \\ & + b_5 (GUIDE * BVC)_t + b_6 (GUIDE * PVAXC)_t \\ & + b_7 (GUIDE * PVTVC)_t + \epsilon_t \end{aligned} \quad (9).$$

The cumulative abnormal return, *CAR(I)*, is the monthly compounded size-adjusted returns cumulated over period *I*, where *I*=1 for one year and *I*=2 for two years. The compounding begins one month after Value Line analysts' forecast date (t=0) and ends 13 months (25 months) after the date for *I*=1 (*I*=2). Since the firm value components are constructed using the second Value Line report released during the fiscal year, the compounding date on average begins around the mid-fiscal year. The size-adjusted returns are calculated as the difference between the raw returns of the firm over the

specified period and the contemporaneous returns of an equally-weighted size decile control portfolio using all available firms traded on NYSE, AMEX, and NASDAQ.[15] The variables *BVC*, *PVAXC* and *PVTVC* are price-deflated values of *BV*, *PVAX* and *PVTV*, respectively.

Recall that a positive b_6 on $GUIDE * PVAX$ and a negative b_7 on $GUIDE * PVTV$ in Equation (5) suggest that investors place too much (little) weight on short-term earnings (long-term) earnings of guidance firms. If the coefficients truly capture over- (under-) valuation of guidance firms' short-term (long-term) earnings, then subsequent returns should be negatively associated with $GUIDE * PVAXC$ ($b_6 < 0$) and positively associated with $GUIDE * PVTVC$ ($b_7 > 0$) in Equation (9).

Column three (four) of Table 9 presents the results from the regression analysis for the non-guidance (guidance) firms. The b_2 (b_3) coefficient captures the association between current short-term (long-term) earnings and the future abnormal returns. I find that the non-interacted coefficients for both samples are not statistically significant. The non-significant coefficient of the guidance sample does not support the myopic pricing explanation and it could be due to measurement errors in the calculation of firm value components.

However, the coefficients on $GUIDE * PVAXC$ (b_6) and $GUIDE * PVTVC$ (b_7) are both significantly different from zero and directionally consistent with the price reversal explanation. Specifically, b_6 is negative (-0.629) and b_7 is positive (0.044) for

[15] To calculate the reference portfolios' returns, I first divide all NYSE firms into deciles based on their firm size. Then, I assign AMEX and NASDAQ firms to the deciles according to their firm size. Lastly, I calculate the average monthly returns for each size decile and compound them over the specified period.

the one-year-ahead returns test. The coefficients suggest that future returns are more negatively (positively) associated with short-term (long-term) earnings of guidance firms than with those of the control firms. These results provide some support that investors subsequently make pricing adjustments to correct for previous over- (under-) valuation of expected short-term (long-term) earnings.

Figure 4 shows the temporal patterns in the magnitudes of pricing adjustments. The top graph represents the three-year moving averages of b_7 from column 5 of Table 9, and the bottom graph captures the moving averages of b_6. The order of the graphs is reversed for the purpose of comparison with Figure 3. As shown in the graphs, the magnitudes of adjustments for both short-term and long-term earnings converge close to zero by the end of the sample period, and the declining patterns correspond with those in Figure 3.

6.2 Measurement Errors and Hedge Portfolio Returns Tests

In addition to the future-returns test, I also construct hedge portfolios to examine whether future abnormal returns can be earned. To form the portfolios, I decile-rank firms based on their proportion of short-term earnings over the share price [*PVAX/P*]. Firms in the highest (lowest) decile represent those with relatively high (low) short term earnings expectations and/or relatively low (high) long term earnings expectations. The portfolios take a long position in firms that are in the highest decile and a short position in firms that are in the lowest decile. Then, I regress the monthly differences in returns between the two deciles of firms on a set of control variables:

$$R_p = \alpha + b_1 HML + b_2 MRFR + b_3 SML + e \quad (10)$$

where R_p is the equally weighted monthly returns of the hedge portfolios; *SML*, *MRFR* and *HML* are size, market premium and book-to-market factors (see Fama and French (1993) for the construction of these factors). Firms remain in the portfolios for the specified number of months (6, 12 or 18 months) after portfolio formation (the time when the second Value Line report for the fiscal year is released), and the portfolios are reset yearly. The hedge portfolio abnormal returns are captured by the intercept, α.

If investors overvalue (undervalue) short-term (long-term) earnings of guidance firms, then the hedge portfolio should generate negative abnormal returns, i.e., $\alpha < 0$. Panel A of Table 10 presents the results for the guidance sample. The intercepts for the 6-month, 12-month and 18-month tests are -0.020, -0.007 and -0.007, respectively. The coefficients are directionally consistent with price reversal explanation; however, only the coefficient for the 6-month window is statistically significant. To the extent that the abnormal returns represent price correction, it is surprising that mispricing is fully reversed in a 6-month window given that future earnings have yet been revealed. One plausible explanation may be that the revelation of one-year-ahead actual earnings helps investors realize their overvaluation of short-term earnings expectation and helps them adjust their expectations of future earnings accordingly.

Panel B reports the coefficients for non-guidance firms. The intercepts for the 6-month, 12-month and 18-month tests are -0.004, 0.012 and 0.011, respectively; however, they are not statistically different from zero. The results suggest that investors do not myopically price the control firms.

In Panel C, I form a third portfolio to examine whether the abnormal returns generated by guidance and non-guidance firms are different. A finding of more negative abnormal returns for guidance firms would support the claim that investors myopically value their firm value components. The monthly portfolio returns are calculated as the difference in monthly portfolio returns between the guidance and non-guidance portfolios. As the results indicate, the portfolio generates negative abnormal returns in both the 12-month and 18-month window. Lastly, Panel D presents the results from the mean-comparison tests of monthly portfolio returns between the guidance and non-guidance portfolios. The results from the univariate tests suggest that the hedge portfolio of guidance firms, on average, perform less well than that of non-guidance firms over a 12-month window. Consistent with the results from the future-return tests (reported in Table 9), the overall results from the hedge portfolio tests provide some limited evidence that investors subsequently correct for their over-weighting (under-weighting) of guidance firms' short-term (long-term) earnings.

6.3 Analyses of Regression Residuals and Analysts' Forecast Errors

Discussions in Chapter 6.1 suggest that measurement error in the discount rate is unlikely the explanation for the documented differential valuation of quarterly guidance firms. In this subchapter, I evaluate the potential effect of the second form of measurement error, which relates to the calculation of firm value components. The measurement error could explain the differential valuation if the error is significantly different between quarterly guidance and control firms. Prior studies suggest that

management guidance helps analysts make more accurate earnings forecasts (Chen, Matsumoto and Rajgopal, 2011). Thus, if analysts' forecasts of future earnings are more accurate for guidance firms than for non-guidance firms, then it is not surprising that investors place higher weight on the short-term earnings of guidance firms (Kim and Verrecchia, 1991).

To evaluate the potential bias, I examine the residuals from regression Equation (5) for the quarterly guidance sample:

$$P_{jt} = b_0 + b_1 BV_{jt} + b_2 PVAX_{jt} + b_3 PVTV_{jt} + b_4 GUIDE_{jt} + b_5 (GUIDE*BV)_{jt} + b_6 (GUIDE*PVAX)_{jt} + b_7 (GUIDE*PVTV)_{jt} + \varepsilon_{jt}.$$

The ε_{jt} is the residual value of firm *j* at time *t*, and all other variables are defined in Appendix. Panel A of Table 11 presents the mean residuals in signed and absolute values and the mean variance of the residuals. The mean signed residuals are zero for both the quarterly guidance and non-guidance samples, and a graphical analysis (not reported) suggests that the residuals of both samples are normally distributed. The mean variance of the residuals is 143.256 for guidance firms and 144.776 for non-guidance firms. The difference of -1.520 is statistically insignificant, indicating that the residuals are homoscedastic. However, the mean absolute residuals for the guidance and non-guidance samples are 7.939 and 8.437, respectively; the difference is -0.498 and is statistically significant. To better gauge the scale of the difference, I estimate the strength of correlation between the indicator variable *GUIDE* and each of the three measures of residuals. Unsurprisingly, the correlation coefficients in Panel B show that

the only statistically significant correlation is between *GUIDE* and the absolute value of residuals, and the correlation is weak (r = -0.028).

The small difference in absolute residuals is mostly likely caused by the differential accuracy of analysts' earnings forecasts between guidance and control firms. To investigate the possibility, I compare analysts' earnings forecast errors between the two groups of firms. Panel A of Table 12 reports the mean Value Line analysts' forecast error for the one-, two-, three- and four-year-ahead earnings over the sample period. The forecast error is calculated as the absolute value of the difference between actual and forecasted earnings reported by Value Line, scaled by share price at *t-1*. The results show that analysts' forecast of one-year-ahead earnings are more accurate for guidance firms. However, there are no significant differences in forecast accuracy for the two-, three- and four-year-ahead earnings.

The differential accuracy of analyst earnings forecast for the one-year-ahead earnings could influence the weight on the short-term earnings. To investigate that possibility, I decompose the aggregate one-year-ahead forecast error by year. The results in Panel B of Table 12 show that the difference in the aggregate one-year-ahead forecast error is driven by differences in years 2002, 2003, 2004 and 2008. While the annual differences may contribute to the evidence of overvaluation of short-term earnings, they are unlikely the only explanation for the documented differential valuation. For example, Figure 3 shows that there is a large overvaluation of short-term earnings in 2000, and yet there is no difference in analyst forecast error for that year. Likewise, results (not reported) shows that there is no overvaluation of short-term

earnings in 2008, but the difference in analyst forecast error for that year is the largest of the sample period.

Nonetheless, to further mitigate the effect of differential analyst forecast accuracy, I redefine the matching criteria to include the one-year-ahead forecast error as an additional factor. The control firms are matched to guidance firms based on the propensity scores derived from estimating the logistic model annually (Equation (8)). By construction, the matched guidance and control firms should have very similar analyst forecast error each year. Table 13 provides the results from re-estimating the relation between price and firm value components (Equation (5)). Similar to those reported in Table 4, the coefficients on *GUIDE*PVAX* and *GUIDE*PVTV* are 1.489 and -0.351, respectively.

In summary, the results from the analyses of residuals and analysts' forecast errors suggest that the differential valuation of quarterly guidance firms' earnings short-term earnings is unlikely caused by measurement errors in the construction of firm value components.

6.4 Effect of "Earnings Warnings" Guidance

The original samples used to estimate Equation (5) include all types of earnings guidance. One concern is that the higher weight placed on the short-term earnings of quarterly guidance firms is primarily driven by "earnings warnings" guidance. The conjecture is that investors will respond more to the expectation of one-year-ahead earnings if management provides warnings of earnings shortfall through guidance. To

mitigate the concern, I re-estimate Equation (5) using a sample that excludes earnings warnings observations. I exclude earnings warnings guidance utilizing two different approaches. The first approach involves removing firm-years that contain less than two management earnings forecasts. These sporadic management forecasts are more likely management's attempts to warn investors of poor performance for the upcoming year. The second approach removes firm-years that contain management forecasts that are all labeled by Value Line as "earnings shortfall" guidance. This type of guidance by nature consists of management forecasts made to warn investors about firms' likelihood of missing the market's earnings expectations.

Column three in Table 14 presents the results under the first approach. The coefficients on *GUIDE*PVAV* and *GUIDE*PVTV* are 1.455 and -0.219, respectively. Column four reports the results under the second approach. The coefficients on *GUIDE*PVAV* and *GUIDE*PVTV* are 1.977 and -0.212, respectively. The values on the coefficients are very similar to those reported using the original sample (Table 4). Thus, this set of tests suggests that the evidence of differential valuation of quarterly guidance firms is not primarily driven by earnings warnings guidance.

6.5 Differences in CAPM Beta and Earnings Properties

Another competing explanation for the evidence of differential valuation is that short-term earnings of quarterly guidance firms are better indicators of their future earnings than are short-term earnings of non-guidance firms. Therefore, it is not surprising that investors assign higher to the short-term earnings of guidance firms. This

is consistent with prior literature that price-earnings relation is correlated with earnings persistence and future earnings growth (Kothari, 2001). Or, investors may respond more strongly to short-term earnings of quarterly guidance firms because they have lower risk (Kothari, 2001). To investigate the plausibility of the competing explanations I compare earnings persistence, risk and actual earnings growth up to four years ahead between the two groups of firms.

Earnings persistence is captured by β_1 from the regression model: $Earn_{t+1} = \alpha_0 + \beta_1 Earn_t + \varepsilon_t$, where $Earn_{t+1}$ is earnings (Compustat item IB) at year t+1 and $Earn_t$ is earnings at year t. Earnings growth is measured as the percentage change in earnings-per-share over the specified period. Risk is proxied by the beta from the capital asset pricing model (CAPM).

The results in Table 15 reveal that there is a slight difference in the average values of CAPM beta between guidance and non-guidance firms. Recall that the discount rate is calculated as the risk-free rate, plus beta times an assumed market. Thus, a small difference in beta produces only an insignificant difference in the discount rate. To the extent that the CAPM beta captures risk, this finding suggests that the small difference cannot fully explain the results documented in Table 4. For the average annual earnings growth, I find that guidance firms have a smaller (larger) negative growth rate than non-guidance firms during the second (third) year subsequent to the pricing dates. However, the average earnings growth rates over the subsequent five years are not significantly different between the two groups of firms. In sum, the

analyses suggest that the differential valuation documented is unlikely driven by differences in risk, earnings persistence and earnings growth between the two groups of firms.

Chapter 7: Conclusion

Critics of earnings guidance repeatedly allege that firms, by frequently conditioning the market with short-term expectations, lead investors to overemphasize short-term performance and neglect long-term prospects. Others argue that, absent management forecasts, market myopia will continue because investors can derive short-term expectations from other sources such as firms' quarterly financial reports and analysts' forecasts. They cite other reasons such as the rising popularity of speculative funds, the shift in taxation policy on capital gains and changes in the sell-side analysts' commission rate system as the primary causes of market-short-termism.

Motivated by the ongoing debate, this study evaluates the relation between the earnings guidance practice and investor short-sightedness. Using an adaptation of Ohlson's (1995) valuation model, I find that investors place significantly higher (lower) weight on short-term (long-term) earnings of quarterly guidance firms than on the corresponding earnings of non-guidance firms, and the differential weighting is not present for annual guidance firms. These findings are consistent with critics' allegation that quarterly guidance leads to investor short-termism and that firms can redirect investor focus away from short-term performance by switching from quarterly to annual guidance.

However, there are other potential explanations for the main findings. For example, the differential weighting could be caused by the differences in earnings properties, risk, or accuracy of analysts' forecasts between guidance and control firms.

Or, the findings could be attributed to error-in-variable biases. The univariate tests do not find significant differences on those dimensions between the two groups of firms, and the future-returns tests also suggest that measurement errors cannot be the full explanation. Overall, the results are more consistent with the explanation that differential weighting of quarterly guidance firms arises because investors myopically price the firms.

To gain insight on the question whether myopic pricing of quarterly guidance firms is driven by the market as a whole or by a subset of investors, I investigate the role of different types of institutional investors. Using Bushee's (1998) classification, I find no evidence that mispricing is limited to (or exacerbated by) transient investors, implying that myopic pricing is a market-wide phenomenon. This study documents a positive relation between quarterly guidance and investor short-termism and thus adds to our understanding of the costs and benefits of providing quarterly guidance.

Future research may further investigate other factors that cause the equity market to be short-term oriented. In addition to quarterly earnings guidance, critics also argue that misaligned executive compensation contributes to investor short-termism. Thus, it would be worthwhile to investigate the impact of top management's compensation structure on time horizon of their voluntary disclosures. It would also be interesting to learn whether the relation between executive compensation structure and voluntary disclosure is "moderated" by firms' governance.

TABLE 1

Sample Selection and Distribution

Panel A: Sample Selection Procedures

1. Extract all Compustat firm-year observations from 1993 to 2009 and keep those with available data items.	91,578
2. Merge with IBES dataset to obtain necessary analyst forecast data items.	46,328
3. Merge with Institutional Ownership dataset to obtain ownership and trading data items.	37,538
4. Merge with Value Line dataset to obtain analysts' forecasts of future firm value components.	19,261
5. Merge with Guidance dataset and keep the firm-years that have either quarterly or annual earnings guidance.	
Quarterly earnings guidance sample	4,559
Annual earnings guidance sample	2,142

Panel B: Yearly Distribution of the Samples.

	Firm-years*	
Year	Quarterly Guidance	Annual Guidance
2000	78	55
2001	337	77
2002	544	154
2003	597	204
2004	639	249
2005	554	250
2006	536	289
2007	482	293
2008	443	306
2009	349	265
Total	4,559	2,142

*The firm-years do not include the one-to-one matched control firms.

TABLE 2

Descriptive Statistics and Univariate Tests

	Mean			Median			STDEV		25th Percentile		75th Percentile	
	Guidance	Non-Guidance	Difference (p-value)	Guidance	Non-Guidance	Difference (z-value)	Guidance	Non-Guidance	Guidance	Non-Guidance	Guidance	Non-Guidance
P	33.32	37.14	-3.82*** (0.000)	29.47	30.50	-1.03*** (0.000)	23.78	41.19	18.57	19.87	43.50	45.21
BV	12.24	14.06	-1.82*** (0.000)	10.27	11.56	-1.29*** (0.000)	8.44	12.73	6.57	6.99	15.85	18.54
PVAX	0.44	0.49	-0.05** (0.044)	0.32	0.39	-0.07** (0.023)	1.36	1.28	-0.14	-0.12	0.89	0.96
PVTV	23.49	23.07	0.42 (0.552)	18.86	17.05	1.81*** (0.000)	21.63	43.24	10.52	9.97	31.06	27.23
CAR	-0.01	0.00	-0.01** (0.017)	-0.04	-0.03	-0.01*** (0.001)	0.32	0.31	-0.21	-0.17	0.14	0.14
ALL_HOLD	85.40	73.81	11.59*** (0.000)	90.83	79.85	10.98*** (0.000)	16.93	23.97	75.69	61.65	100.00	93.16
TRA_HOLD	25.35	19.12	6.23*** (0.000)	22.93	17.99	4.94*** (0.000)	13.22	12.18	15.26	10.01	33.14	24.96
QIX_HOLD	50.82	44.32	6.50*** (0.000)	52.54	46.17	6.37*** (0.000)	14.68	16.16	43.36	36.44	61.13	54.01
DED_HOLD	9.23	10.37	-1.14 (0.129)	9.70	8.51	1.19*** (0.000)	7.57	9.48	5.24	4.12	15.20	15.14
ALL_VOL	101.42	81.22	20.20*** (0.000)	84.17	68.73	15.44*** (0.000)	64.27	59.71	56.90	39.20	124.73	101.29

(Table 2 continued)

	Mean			Median			STDEV		25th Percentile		75th Percentile	
	Guidance	Non-Guidance	Difference (p-value)	Guidance	Non-Guidance	Difference (z-value)	Guidance	Non-Guidance	Guidance	Non-Guidance	Guidance	Non-Guidance
TRA_VOL	34.87	25.87	9.00*** (0.000)	30.37	22.20	8.17*** (0.000)	22.06	19.76	18.55	11.65	45.74	35.41
QIX_VOL	55.45	44.35	11.10*** (0.000)	41.43	34.04	7.39*** (0.000)	41.84	35.98	29.73	21.57	62.76	49.64
DED_VOL	11.10	11.00	0.10 (0.140)	7.74	6.33	1.41*** (0.000)	11.44	17.62	4.01	2.57	13.67	12.00
EARN_STD	0.35	0.37	-0.02** (0.031)	0.21	0.20	0.01 (0.191)	0.52	0.52	0.13	0.11	0.38	0.45
NANALYSTS	11.74	12.45	-0.71*** (0.000)	10.00	11.00	-1.00 (0.720)	6.85	8.69	6.00	5.00	16.00	18.00
AF_DISPER	0.11	0.15	-0.04*** (0.000)	0.06	0.10	-0.04*** (0.000)	0.25	0.21	0.03	0.05	0.12	0.18
SIZE	7.89	7.92	-0.03 (0.372)	7.70	7.77	-0.07 (0.318)	1.42	1.51	6.87	6.80	8.78	8.95
M2B	1.37	1.37	0.00 (0.751)	1.30	1.26	0.04*** (0.008)	0.50	0.62	1.02	1.02	1.62	1.59

This table reports descriptive statistics for the variables and the results from univariate tests of their differences between guidance and non-guidance firms. The variables are defined in Appendix. P-values (z-values) are based on two-tailed t-tests (rank-sum tests). *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 3

Correlation Analysis

Panel A. Correlation Matrix for Quarterly Guidance Sample

Variable	*P*	*BV*	*PVAX*	*PVTV*	*CAR*	*ALL_ HOLD*	*TRA_ HOLD*	*QIX_ HOLD*	*DED_ HOLD*	*ALL_ VOL*	*TRA_ VOL*	*QIX_ VOL*	*DED_ VOL*	*EARN_ STD*	*NANA- LYSTS*	*AF_ DISPER*	*SIZE*	*M2B*
P	1	0.5103*	0.5474*	0.6425*	0.0051	-0.0217	-0.1085*	0.0629*	0.0431*	0.0261*	-0.0361*	0.0604*	0.0410*	0.0754*	0.2202*	-0.3567*	0.5162*	0.3883*
BV	0.5411*	1	0.1278*	0.0887*	0.0284*	0.0430*	-0.1333*	0.2206*	-0.0154	-0.0163	-0.0984*	0.0595*	-0.0433*	0.2360*	-0.0374*	-0.0256*	0.1521*	-0.4747*
PVAX	0.6794*	0.2321*	1	0.6440*	0.024	-0.1299*	-0.1854*	0.0057	-0.0493*	-0.1516*	-0.1633*	-0.1114*	-0.1034*	-0.0217	0.1092*	-0.2444*	0.3914*	0.4252*
PVTV	0.6681*	0.1506*	0.7367*	1	-0.0852*	-0.0463*	-0.1245*	0.0509*	0.0205	-0.0280*	-0.0741*	-0.0029	0.0332*	-0.0689*	0.2714*	-0.4197*	0.5085*	0.5823*
CAR	-0.0322*	0.0005	-0.0074	-0.0803*	1	-0.0515*	-0.0235	-0.0517*	-0.0051	-0.0439*	-0.014	-0.0577*	-0.0104	0.0218	0.0075	0.0342*	0.0261*	-0.0407*
ALL_HOLD	0.0023	0.0724*	-0.0552*	-0.0261*	-0.0360*	1	0.6902*	0.6773*	0.3394*	0.6327*	0.6366*	0.5777*	0.4001*	0.0069	-0.1126*	-0.0357*	-0.3180*	-0.0516*
TRA_HOLD	-0.0698*	-0.1195*	-0.0930*	-0.0680*	0.0188	0.5964*	1	0.2009*	0.0704*	0.6371*	0.8674*	0.4586*	0.2907*	0.0851*	-0.1061*	0.0468*	-0.3768*	0.0303*
QIX_HOLD	0.0246*	0.1638*	0.0057	0.0303*	-0.0590*	0.6829*	0.1868*	1	-0.0067	0.3623*	0.2235*	0.4862*	0.1082*	-0.0534*	-0.0981*	-0.0693*	-0.1395*	-0.1361*
DED_HOLD	0.0039	-0.0022	-0.0513*	-0.0153	-0.0304*	0.3365*	0.0250*	-0.0299*	1	0.1737*	0.0887*	0.0946*	0.5779*	0.01	0.0714*	-0.0515*	0.0199	0.0727*
ALL_VOL	0.0288*	0.0023	-0.1035*	-0.0329*	-0.0254	0.4796*	0.4808*	0.3519*	0.1227*	1	0.8625*	0.9323*	0.6298*	0.0242	0.0217	0.0024	-0.1435*	0.0502*
TRA_VOL	-0.0207	-0.0863*	-0.0912*	-0.0474*	0.0273*	0.5352*	0.8431*	0.1955*	0.0337*	0.7674*	1	0.6864*	0.4539*	0.0817*	0.0014	0.0378*	-0.2179*	0.0589*
QIX_VOL	0.0502*	0.0527*	-0.0874*	-0.0242	-0.0447*	0.3704*	0.2408*	0.4157*	0.0380*	0.9392*	0.5408*	1	0.5121*	-0.0136	0.0098	-0.0159	-0.1079*	0.0185
DED_VOL	0.0168	-0.0125	-0.0850*	-0.0072	-0.0322*	0.2920*	0.1760*	0.0747*	0.4831*	0.6685*	0.3764*	0.5494*	1	0.0274*	0.1324*	-0.0259*	0.0375*	0.1003*
EARN_STD	0.0866*	0.1440*	0.0818*	0.0284*	0.0215	0.014	0.0628*	-0.0432*	0.0006	-0.0051	0.0470*	-0.0357*	0.0114	1	-0.0063	0.2429*	0.0351*	-0.2000*
NANALYSTS	0.1404*	-0.0343*	0.0275*	0.1616*	-0.0173	-0.1099*	-0.1061*	-0.1090*	0.0223	0.011	-0.0114	-0.0003	0.0817*	-0.0036	1	-0.1779*	0.6588*	0.2608*
AF_DISPER	-0.1351*	-0.0344*	-0.0797*	-0.1444*	0.0244	-0.0406*	0.0300*	-0.0648*	-0.0189	-0.0203	0.009	-0.0315*	-0.016	0.1199*	-0.1245*	1	-0.2472*	-0.3651*
SIZE	0.4091*	0.1546*	0.2550*	0.3996*	-0.0284*	-0.2791*	-0.3739*	-0.1412*	-0.0293*	-0.1129*	-0.2297*	-0.0556*	0.0128	-0.011	0.6492*	-0.1555*	1	0.3830*
M2B	0.2935*	-0.4170*	0.2750*	0.4109*	-0.0617*	-0.0618*	0.0296*	-0.1240*	0.0447*	0.0270*	0.0492*	-0.001	0.0603*	-0.0846*	0.2335*	-0.1387*	0.3711*	1

(Table 3 continued)

Panel B. Correlation Matrix for Non-Guidance Sample

Variable	*P*	*BV*	*PVAX*	*PVTV*	*CAR*	*ALL_ HOLD*	*TRA_ HOLD*	*QIX_ HOLD*	*DED_ HOLD*	*ALL_ VOL*	*TRA_ VOL*	*QIX_ VOL*	*DED_ VOL*	*EARN_ STD*	*NANA- LYSTS*	*AF_ DISPER*	*SIZE*	*M2B*
P	1	0.5585*	0.5354*	0.5790*	0.0657*	-0.0445*	-0.0433*	-0.0604*	0.0286*	0.0232	0.0138	0.0075	0.0658*	0.2498*	0.3678*	-0.0781*	0.5772*	0.2984*
BV	0.7708*	1	0.2411*	0.0937*	0.0482*	-0.0676*	-0.1492*	0.0422*	-0.0846*	-0.0861*	-0.1146*	-0.0553*	-0.0853*	0.3365*	0.1636*	0.1777*	0.2886*	-0.5253*
PVAX	0.6827*	0.4961*	1	0.5180*	0.0461*	-0.0851*	-0.1097*	-0.0264*	-0.0640*	-0.0629*	-0.0587*	-0.0666*	-0.0507*	0.0789*	0.2150*	-0.0685*	0.3813*	0.2994*
PVTV	0.8873*	0.5985*	0.6651*	1	-0.0307*	-0.0013	0.0126	-0.0702*	0.0319*	0.0489*	0.0708*	0.0062	0.0806*	-0.0198	0.3059*	-0.2588*	0.4682*	0.5116*
CAR	-0.0035	0.0181	0.01	-0.0502*	1	0.0135	0.0026	-0.0534*	0.0816*	0.0059	0.0099	-0.0119	0.0503*	0.0661*	0.0872*	0.0873*	0.0657*	0.0177
ALL_HOLD	0.0129	-0.0236	-0.0131	0.023	0.0159	1	0.7176*	0.7305*	0.5618*	0.6616*	0.6718*	0.5988*	0.5177*	0.1342*	0.1397*	0.1831*	-0.1571*	0.0270*
TRA_HOLD	-0.0275*	-0.1233*	-0.0800*	0.0068	0.0109	0.6577*	1	0.3269*	0.2723*	0.6752*	0.8854*	0.5258*	0.4021*	0.0997*	0.1081*	0.1112*	-0.1990*	0.1327*
QIX_HOLD	-0.0138	0.0497*	-0.0006	-0.0159	-0.0388*	0.7929*	0.3139*	1	0.2269*	0.4198*	0.3233*	0.5006*	0.2445*	0.0937*	0.0679*	0.1096*	-0.1134*	-0.1122*
DED_HOLD	0.0789*	-0.0107	0.0281*	0.0640*	0.0785*	0.4783*	0.1227*	0.0722*	1	0.3323*	0.2686*	0.2553*	0.6499*	0.0607*	0.2297*	0.0579*	0.0233	0.0950*
ALL_VOL	0.0330*	-0.0552*	-0.0151	0.0028	0.0289*	0.5287*	0.4993*	0.3353*	0.2827*	1	0.8696*	0.9460*	0.7075*	0.0419*	0.1769*	0.1115*	-0.0529*	0.1357*
TRA_VOL	0.0181	-0.0903*	-0.0256*	0.0279*	0.0152	0.5726*	0.8494*	0.2685*	0.1363*	0.7603*	1	0.7262*	0.5506*	0.0950*	0.1930*	0.1144*	-0.0635*	0.1615*
QIX_VOL	0.0107	-0.0266*	-0.0396*	-0.0233	0.0215	0.4207*	0.2897*	0.3986*	0.1140*	0.9153*	0.5570*	1	0.5993*	0.0265*	0.1317*	0.0969*	-0.0727*	0.0845*
DED_VOL	0.0694*	-0.0296*	0.0585*	0.0246*	0.0365*	0.2832*	0.1406*	0.0196	0.5671*	0.6549*	0.3064*	0.4257*	1	0.0141	0.2638*	0.0408*	0.0821*	0.1711*
EARN_STD	0.2890*	0.3526*	0.1629*	0.2068*	0.0625*	0.0913*	0.0634*	0.0394*	0.0611*	-0.0056	0.0952*	-0.0505*	-0.0214	1	0.1280*	0.3783*	0.1429*	-0.1603*
NANALYSTS	0.2263*	0.1588*	0.2292*	0.1682*	0.0794*	0.2088*	0.0496*	0.0988*	0.2277*	0.1637*	0.1132*	0.1126*	0.1947*	0.1147*	1	0.0168	0.7140*	0.2040*
AF_DISPER	-0.0344*	0.0661*	0.0411*	-0.0643*	0.0203	0.0567*	0.0961*	0.0082	0.0011	0.0233	0.0744*	0.0007	-0.0083	0.1934*	0.0075	1	-0.0888*	-0.3392*
SIZE	0.3572*	0.2603*	0.3531*	0.2652*	0.0263*	-0.1421*	-0.2041*	-0.1238*	0.02	-0.002	-0.0727*	-0.003	0.0814*	0.0826*	0.6767*	-0.0369*	1	0.2819*
M2B	0.1183*	-0.2866*	0.1675*	0.1512*	-0.0226	0.0403*	0.1536*	-0.0744*	0.0393*	0.0917*	0.1556*	0.0279*	0.0779*	-0.0254*	0.1117*	0.1264*	0.2098*	1

The Spearman (Pearson) correlations are reported at the top (bottom) of the diagonal. * indicates that the correlation is statistically significant at a level of 10% or lower. All variables are defined in Appendix.

TABLE 4

Regression Analysis of Price on Components of Firm Value

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + \varepsilon_t \quad (5)$$

		Annual Guidance			**Quarterly Guidance**		
		Mean Coefficient			Mean Coefficient		
Variable	Predicted Value/Sign	Non-Guidance	Guidance	Difference	Non-Guidance	Guidance	Difference
Intercept	0	2.242	5.372***	2.242	5.268***	8.332***	5.268***
		(0.260)	(0.000)	(0.260)	(0.005)	(0.001)	(0.005)
BV	1	1.238***	0.977***	1.239***	1.068***	1.067***	1.068***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PVAX	+/-	2.136*	2.826***	2.136*	2.952***	4.402***	2.952***
		(0.064)	(0.012)	(0.064)	(0.005)	(0.000)	(0.005)
PVTV	+/-	0.706***	0.681***	0.706***	0.680***	0.434***	0.680***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GUIDE	+/-			3.130			3.064
				(0.105)			(0.124)
*GUIDE*BV*	+/-			-0.262*			-0.001
				(0.097)			(0.992)
GUIDE*PVAX	**+**			**0.690**			**1.451****
				(0.426)			(0.035)
GUIDE*PVTV	**-**			**-0.025**			**-0.246*****
				(0.652)			(0.002)
Average Annual N		214	214	428	456	456	912

The regression analyses test for differences in investors' response to the firm value components of guidance and non-guidance firms. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted one-year-ahead abnormal earnings; *PVTV* is the present value of all forecasted abnormal earnings beyond the one-year horizon. *GUIDE* is an indicator variable that equals one if the firm provides quarterly or annual guidance and zero otherwise. The regressions are estimated yearly and the coefficients reported are the mean coefficients over the sample period (2000-2009) and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. The standard errors are adjusted for serial correlation using Newey-West methodology with one lag. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 5

Regression Analysis of Price on Components of Firm Value, Using a Reduced Sample

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + \varepsilon_t \quad (5)$$

Variable	Predicted Value/Sign	Mean Coefficient
Intercept	0	4.867***
		(0.009)
BV	1	1.049***
		(0.000)
PVAX	+/-	3.005***
		(0.006)
PVTV	+/-	0.701***
		(0.000)
GUIDE	+/-	3.103
		(0.160)
*GUIDE*BV*	+/-	0.029
		(0.734)
GUIDE*PVAX	**+**	**1.424***
		(0.072)
GUIDE*PVTV	**-**	**-0.264*****
		(0.008)
Average Annual N		428

The regression analysis tests for whether differences in the results between the annual and quarterly guidance samples (Table 4) are due to the sample size difference between the two samples. This table repeats the valuation estimation using a reduced quarterly guidance sample. Specifically, for every year in the sample, I randomly select a number of quarterly guidance firms that equals the number of firms in the annual guidance sample. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted one-year-ahead abnormal earnings; *PVTV* is the present value of all forecasted abnormal earnings beyond the one-year horizon. *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise. The regressions are estimated yearly and the coefficients reported are the mean coefficients over the sample period (2000-2009) and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. The standard errors are adjusted for serial correlation using Newey-West methodology with one lag. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 6

Differences in Firm Valuation before and after Inception of Guidance

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + b_8POST_t + b_9(POST*BV)_t + b_{10}(POST*PVAX)_t + b_{11}(POST*PVTV)_t + b_{12}(POST*GUIDE)_t + + b_{13}(POST*GUIDE*BV)_t + b_{14}(POST*GUIDE*PVAX)_t + b_{15}(POST*GUIDE*PVTV)_t + \varepsilon_t \quad (6a)$$

		Before Issuing Guidance		**After Issuing Guidance**	**Difference**
Variable	Predicted Value/Sign	Mean Coefficient	Predicted Value/Sign	Mean Coefficient	Mean Coefficient
Intercept	0	10.384*** (0.000)	0	7.800*** (0.000)	10.384*** (0.000)
BV	1	0.984*** (0.000)	1	1.043*** (0.000)	0.984*** (0.000)
PVAX	+/-	2.929** (0.041)	+/-	1.730*** (0.000)	2.929** (0.041)
PVTV	+/-	0.788*** (0.000)	+/-	0.550*** (0.000)	0.788*** (0.000)
GUIDE	+/-	-0.640 (0.826)	+/-	0.961 (0.625)	-0.640 (0.826)
*GUIDE*BV*	+/-	0.222 (0.160)	+/-	0.111 (0.327)	0.222 (0.160)
GUIDE*PVAX	**0**	**0.560** (0.762)	**+**	**3.774*** ** (0.000)	0.560 (0.762)
GUIDE*PVTV	**0**	**-0.054** (0.527)	**-**	**-0.241*** ** (0.000)	-0.054 (0.527)
POST	0				-2.386 (0.341)
*POST*BV*	+/-				0.059 (0.643)
*POST*PVAX*	+/-				-1.199 (0.371)

(Table 6 continued)

Variable	Predicted Value/Sign	**Before Issuing Guidance** Mean Coefficient	Predicted Value/Sign	**After Issuing Guidance** Mean Coefficient	**Difference** Mean Coefficient
*POST*PVTV*	+/-				-0.237***
					(0.004)
*POST*GUIDE*	+/-				1.601
					(0.645)
*POST*GUIDE*BV*	+/-				-0.111
					(0.567)
POST*GUIDE*PVAX	**+**				**3.214***
					(0.097)
POST*GUIDE*PVTV	**-**				**-0.187***
					(0.078)
N – Firm-years					1,892

The pooled regression analysis in the last column tests for differences in differential valuation of each firm value component before and after guidance firms initial their first quarterly guidance. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted abnormal earnings one year ahead; *PVTV* is the present value of forecasted abnormal earnings beyond one year ahead. *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise; *POST* is an indicator variable that equals zero (one) if the firm-year is two years before (after) the inception of the first guidance. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 7

Differences in Firm Valuation before and after Discontinuation of Guidance

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + b_8POST_t + b_9(POST*BV)_t + b_{10}(POST*PVAX)_t + b_{11}(POST*PVTV)_t + b_{12}(POST*GUIDE)_t + + b_{13}(POST*GUIDE*BV)_t + b_{14}(POST*GUIDE*PVAX)_t + b_{15}(POST*GUIDE*PVTV)_t + \varepsilon_t \quad (6b)$$

		Before Stopping Guidance		**After Stopping Guidance**	**Difference**
Variable	Predicted Value/Sign	Mean Coefficient	Predicted Value/Sign	Mean Coefficient	Mean Coefficient
Intercept	0	2.837* (0.066)	0	3.712** (0.032)	2.837* (0.066)
BV	1	1.210*** (0.000)	1	1.018*** (0.000)	1.210*** (0.000)
PVAX	+/-	3.018*** (0.000)	+/-	4.017*** (0.000)	3.018*** (0.000)
PVTV	+/-	0.811*** (0.000)	+/-	0.615*** (0.000)	0.811*** (0.000)
GUIDE	+/-	-2.217 (0.305)	+/-	-5.433** (0.011)	-2.217 (0.305)
*GUIDE*BV*	+/-	0.090 (0.380)	+/-	0.024 (0.827)	0.090 (0.380)
GUIDE*PVAX	**+**	**1.163*** (0.062)	**0**	**-1.800**** (0.033)	**1.163*** (0.062)
GUIDE*PVTV	**-**	**-0.156**** (0.030)	**0**	**0.227***** (0.003)	**-0.156**** (0.030)
POST	0				0.874 (0.705)
*POST*BV*	+/-				-0.191* (0.096)
*POST*PVAX*	+/-				1.163 (0.230)

(Table 7 continued)

Variable	Predicted Value/Sign	**Before Stopping Guidance** Mean Coefficient	Predicted Value/Sign	**After Stopping Guidance** Mean Coefficient	**Difference** Mean Coefficient
*POST*PVTV*	+/-				-0.196**
					(0.014)
*POST*GUIDE*	+/-				-3.217
					(0.289)
*POST*GUIDE*BV*	+/-				-0.066
					(0.657)
POST*GUIDE*PVAX	**-**				**-2.962****
					(0.012)
POST*GUIDE*PVTV	**+**				**0.384*****
					(0.000)
N – Firm-years					704

The pooled regression analysis in the last column tests for differences in differential valuation of each firm value component before and after guidance firms discontinue their quarterly guidance practice. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted abnormal earnings one year ahead; *PVTV* is the present value of forecasted abnormal earnings beyond one year ahead. *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise; *POST* is an indicator variable that equals zero (one) if the firm-year is one year before (after) the quarterly guidance firm stops providing guidance. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 8

Effects of Different Types of Institutional Investors on Firm Valuation

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + b_8INST_t + b_9(INST*BV)_t + b_{10}(INST*PVAX)_t + b_{11}(INST*PVTV)_t + b_{12}(INST*GUIDE)_t + b_{13}(INST*GUIDE*BV)_t + b_{14}(INST*GUIDE*PVAX)_t + b_{15}(INST*GUIDE*PVTV)_t + \varepsilon_t \quad (7)$$

		INST= TRA_HOLD	***INST= QIX_HOLD***	***INST= DED_HOLD***	***INST= ALL_HOLD***
Variable	Predicted Value/Sign	Mean Coefficient	Mean Coefficient	Mean Coefficient	Mean Coefficient
Intercept	0	5.401***	6.207***	1.934	5.849***
		(0.010)	(0.005)	(0.258)	(0.006)
BV	1	0.992***	0.991***	1.055***	0.967***
		(0.000)	(0.000)	(0.000)	(0.000)
PVAX	+/-	3.034***	3.516***	2.289***	3.214***
		(0.007)	(0.000)	(0.009)	(0.000)
PVTV	+/-	0.670***	0.687***	0.812***	0.705***
		(0.000)	(0.000)	(0.000)	(0.000)
GUIDE	+/-	0.919	0.173	3.152**	2.391
		(0.621)	(0.938)	(0.043)	(0.229)
*GUIDE*BV*	+/-	0.220*	0.187	0.067	0.193
		(0.062)	(0.198)	(0.341)	(0.110)
*GUIDE*PVAX*	+	2.068*	1.646**	2.181	2.332***
		(0.086)	(0.034)	(0.167)	(0.006)
*GUIDE*PVTV*	-	-0.273***	-0.195***	-0.284***	-0.340***
		(0.004)	(0.004)	(0.007)	(0.001)
INST	+/-	-2.807	-3.822*	4.747	-2.140
		(0.405)	(0.065)	(0.141)	(0.244)
*INST*BV*	+/-	0.246	0.136	0.070	0.237
		(0.151)	(0.422)	(0.556)	(0.111)
*INST*PVAX*	+/-	-0.073	-2.800	1.062	-1.257
		(0.961)	(0.156)	(0.482)	(0.618)
*INST*PVTV*	+/-	0.020	0.095	-0.196**	-0.049
		(0.875)	(0.311)	(0.037)	(0.547)

(Table 8 continued)

Variable	Predicted Value/Sign	***INST= TRA_HOLD*** Mean Coefficient	***INST= QIX_HOLD*** Mean Coefficient	***INST= DED_HOLD*** Mean Coefficient	***INST= ALL_HOLD*** Mean Coefficient
*INST*GUIDE*	+/-	4.288	6.614**	-1.247	0.592
		(0.173)	(0.019)	(0.592)	(0.829)
*INST*GUIDE*BV*	+/-	-0.420**	-0.320*	-0.121	-0.419**
		(0.031)	(0.099)	(0.263)	(0.017)
INST*GUIDE*PVAX	**+**	**-1.145**	**2.613**	**-1.475**	**-0.960**
		(0.619)	(0.355)	(0.538)	(0.707)
INST*GUIDE*PVTV	**-**	**0.044**	**-0.193**	**0.111**	**0.258****
		(0.693)	(0.153)	(0.472)	(0.046)
Average Annual N		912	912	912	912

The regression analyses test for the effects of different types of institutional investors on the valuation of firm value components of quarterly guidance firms. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted abnormal earnings one year ahead; *PVTV* is the present value of forecasted abnormal earnings beyond one year ahead; *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise; *TRA_HOLD* equals total shares held by transient investors, divided by total shares outstanding; *QIX_HOLD* equals total shares held by quasi-index investors, divided by total shares outstanding; *DED_HOLD* equals total shares held by quasi-index investors, divided by total shares outstanding; *ALL_HOLD* equals total shares held by all types of institutional investors, divided by total shares outstanding. The regressions are estimated yearly and the coefficients reported are the mean coefficients over the sample period (2000-2009) and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. The standard errors are adjusted for serial correlation using Newey-West methodology with one lag. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 9

Regression Analysis of Future Returns on Current Components of Firm Value

$$CAR(I)_t = b_0 + b_1BVC_t + b_2PVAXC_t + b_3PVTVC_t + b_4GUIDE_t + b_5(GUIDE*BVC)_t + b_6(GUIDE*PVAXC)_t + b_7(GUIDE*PVTVC)_t + \varepsilon_t \quad (9)$$

Variable	Predicted Value/Sign	I = One Year Ahead Non-Guidance	I = One Year Ahead Guidance	I = One Year Ahead Interaction	I = Two Year Ahead Interaction
Intercept	+/-	0.018	-0.042	0.018	0.081
		(0.674)	(0.160)	(0.674)	(0.445)
BVC	-	0.026	0.089	0.026	-0.094
		(0.742)	(0.216)	(0.742)	(0.560)
PVAXC	-	1.421	0.792	1.421	1.668
		(0.241)	(0.437)	(0.241)	(0.201)
PVTVC	+	-0.048	-0.003	-0.048	-0.069
		(0.129)	(0.886)	(0.129)	(0.453)
GUIDE	+/-			-0.060**	-0.117
				(0.021)	(0.133)
*GUIDE*BVC*	+/-			0.063**	0.221*
				(0.021)	(0.087)
GUIDE*PVAXC	**-**			**-0.629****	**-1.629**
				(0.047)	(0.221)
GUIDE*PVTVC	**+**			**0.044***	**0.031**
				(0.095)	(0.654)
Avg. Annual N		456	456	912	912

The regression analyses test for the relation between current firm value components and future abnormal returns. *CAR* is the buy-and-hold size-adjusted abnormal returns over the specified period. The compounding beings one month after the firm value variables are constructed using the second Value Line report released during the year; *BVC* equals book value per share, deflated by price at t=0; *PVAXC* is the present value of forecasted one-year-ahead abnormal earnings, deflated by price at t=0; *PVTVC* is the present value of all forecasted abnormal earnings beyond the one-year horizon, deflated by price at t=0; *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise. The regressions are estimated yearly and the coefficients reported are the mean coefficients over the sample period (2000-2009) and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. The standard errors are adjusted for serial correlation using Newey-West methodology with one lag. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 10

Future Price Reversal Test: Fama-French Three-Factor Model

$R_p = \alpha + b_1HML + b_2MRFR + b_3SML + e$ (10)

Panel A: Abnormal Returns of Guidance Hedge Portfolios

		6 Months	12 months	18 months
	Predicted Value/Sign	Coefficient	Coefficient	Coefficient
Intercept	-	-0.020***	-0.007	-0.007
		(0.001)	(0.427)	(0.209)
HML	+/-	0.232	-0.122	0.047
		(0.301)	(0.641)	(0.749)
MRFR	+/-	-0.414**	-0.943***	-0.524***
		(0.013)	(0.000)	(0.000)
SML	+/-	-0.398	-0.542**	-0.523***
		(0.125)	(0.033)	(0.004)

Panel B: Hedge Portfolio Abnormal Returns of Non-Guidance Firms

		6 Months	12 months	18 months
	Predicted Value/Sign	Coefficient	Coefficient	Coefficient
Intercept	0	-0.004	0.012	0.011
		(0.822)	(0.278)	(0.270)
HML	+/-	-0.063	-0.061	-0.023
		(0.888)	(0.833)	(0.935)
MRFR	+/-	-1.075***	-1.057***	-1.094***
		(0.001)	(0.000)	(0.000)
SML	+/-	-0.611	-0.710**	-0.615*
		(0.231)	(0.049)	(0.071)

(Table 10 continued)

Panel C: Difference in Hedge Portfolio Abnormal Returns between Guidance and Non-Guidance Firms

	Predicted Value/Sign	6 Months Coefficient	12 months Coefficient	18 months Coefficient
Intercept	-	-0.007	-0.020*	-0.017*
		(0.625)	(0.053)	(0.062)
HML	+/-	0.156	0.050	0.069
		(0.720)	(0.856)	(0.790)
MRFR	+/-	0.553*	0.456**	0.569***
		(0.082)	(0.032)	(0.004)
SML	+/-	0.332	0.131	0.092
		(0.502)	(0.699)	(0.774)

Panel D: Univariate Test of Average Monthly Hedge Portfolio Returns between Guidance and Non-Guidance Firms

	Predicted Value/Sign	6 Months Coefficient	12 Months Coefficient	18 Months Coefficient
Guidance	-	-0.020***	-0.010	-0.009
		(0.010)	(0.133)	(0.134)
Non-Guidance	0	-0.001	0.012	0.009
		(0.919)	(0.267)	(0.362)
Difference	-	-0.019	-0.022*	-0.018
		(0.207)	(0.084)	(0.124)

Panel A and Panel B report future abnormal returns from Fama-French three-factor model for the quarterly guidance and non-guidance samples, respectively. The dependent variable is the equally weighted monthly returns of the hedge portfolios. To form the portfolios, I decile-rank firms based on their proportion of short-term earnings over the share price [$PVAX_t/P_t$]. The portfolios take a long (short) position in firms that are in the highest (lowest) decile. Then, the monthly differences in returns between the two deciles of firms are regressed on a set of control variables that accounts for the effects of size (*SML*), market (*MRFR*) and book-to-market (*HML*) (see Fama and French (1993) for the construction of these factors). Firms remain in the portfolios for the specified number of months (6, 12 or 18 months) after portfolio formation (the time when the second Value Line report for the fiscal year is released) and the portfolios are reset yearly. In Panel C, the monthly portfolio returns are calculated as the difference in monthly portfolio returns between the guidance and non-guidance portfolios. Panel D reports the results from the univariate mean-comparison tests of monthly portfolio returns between the two portfolios. The p-values are reported in parentheses, with *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 11

Univariate Tests of Regression Residuals

Panel A. Analysis of Residuals from Equation (5)

	Guidance Mean	Non-Guidance Mean	Difference (p-value)
Signed Residuals	0.000	0.000	0.000 (1.00)
Absolute Residuals	7.939	8.437	-0.498*** (0.007)
Variance of Residuals	143.256	144.776	-1.520 0.898

Panel B. Correlation Analysis Between Guide Indicator and Residuals from Equation (5)

	Guide
Signed Residuals	0.000 1.00
Absolute Residuals	-0.028*** 0.007
Variance of Residuals	-0.001 0.898

Panel A contains the results from the analyses of residuals, which is derived from regression Equation (5) for the quarterly guidance sample: $P_{jt} = b_0 + b_1BV_{jt} + b_2PVAX_{jt} + b_3PVTV_{jt} + b_4GUIDE_{jt} + b_5(GUIDE*BV)_{jt} + b_6(GUIDE*PVAX)_{jt} + b_7(GUIDE*PVTV)_{jt} + \varepsilon_{jt}$. Panel B reports the results from the correlation analysis between the residuals and the indicator variable *GUIDE*, which equals one if the firm provides quarterly guidance and zero otherwise. The p-values are reported in parentheses, with *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 12

Comparison of Analyst Forecast Error between Guidance and Non-Guidance Firms

Panel A. Mean Analysts' Forecast Error by Forecast Time Horizon

	Mean Analyst Forecast Error			
	Yr 1	**Yr 2**	**Yr 3**	**Yr 4**
Guidance	0.012	0.024	0.035	0.044
Non-Guidance	0.014	0.025	0.034	0.043
Difference	-0.002***	-0.001	0.001	0.001
p-value	0.005	0.729	0.329	0.643

Panel B. Annual Mean Analyst Forecast Error for One-year-ahead Earnings

	Mean Analyst Forecast Error			
Year	**Guidance**	**Non-Guidance**	**Difference**	**p-value**
2000	0.018	0.014	0.004	0.364
2001	0.016	0.017	-0.001	0.569
2002	0.011	0.014	-0.003*	0.083
2003	0.013	0.010	0.003**	0.023
2004	0.010	0.014	-0.004***	0.000
2005	0.011	0.011	0.000	0.621
2006	0.010	0.010	0.000	0.780
2007	0.011	0.010	0.001	0.525
2008	0.018	0.029	-0.011***	0.000

Panel A represents the mean Value Line analyst forecast error for the one-, two-, three- and four-year-ahead earnings. Analyst forecast error equal: absolute value of ((Actual_EPS – Forecasted_EPS) /$Price_{t-1}$), where Actual_EPS and Forecasted_EPS are obtained from Value Line data files. The guidance sample contains quarterly guidance firms. For each forecast time horizon, the mean forecast error is calculated as the average forecast error throughout the entire sample period. Panel B reports the annual mean analyst forecast error of guidance and non-guidance firms for the one-year-ahead earnings. *, ** and *** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 13

Regression Analysis of Price on Decomposition of Firm Value

with Matching Analyst Forecast Error

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + \varepsilon_t$$

Variable	Predicted Value/Sign	Mean Coefficient
Intercept	0	3.506**
		(0.030)
BV	1	1.094***
		(0.000)
PVAX	+/-	3.428***
		(0.008)
PVTV	+/-	0.780***
		(0.000)
GUIDE	+/-	5.256
		(0.102)
*GUIDE*BV*	+/-	0.026
		(0.792)
GUIDE*PVAX	**+**	**1.489***
		(0.080)
GUIDE*PVTV	**-**	**-0.351*****
		(0.003)
Average Annual N		912

The regression analysis tests for investors' differential response to the firm value components of quarterly guidance firms. In addition to the five factors (see Equation (8)), the control firms are matched to guidance firms on one-year-ahead analyst forecast error. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted one-year-ahead abnormal earnings; *PVTV* is the present value of all forecasted abnormal earnings beyond the one-year horizon. *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise. The regressions are estimated yearly and the coefficients reported are the mean coefficients over the sample period (2000-2009) and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. The standard errors are adjusted for serial correlation using Newey-West methodology with one lag. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 14

Regression Analysis of Price on Decomposition of Firm Value

Excluding Earnings Warnings Guidance

$$P_t = b_0 + b_1BV_t + b_2PVAX_t + b_3PVTV_t + b_4GUIDE_t + b_5(GUIDE*BV)_t + b_6(GUIDE*PVAX)_t + b_7(GUIDE*PVTV)_t + \varepsilon_t$$

		Excluding Guidance Frequency < 2	**Excluding Earnings Shortfall Guidance**
Variable	Predicted Value/Sign	Mean Coefficient	Mean Coefficient
Intercept	0	3.245	7.040***
		(0.131)	(0.006)
BV	1	1.055***	0.865***
		(0.000)	(0.000)
PVAX	+/-	3.339**	2.957**
		(0.044)	(0.018)
PVTV	+/-	0.737***	0.665***
		(0.000)	(0.000)
GUIDE	+/-	3.618	0.285
		(0.948)	(0.922)
*GUIDE*BV*	+/-	-0.011	0.243*
		(0.948)	(0.074)
GUIDE*PVAX	**+**	**1.455***	**1.977****
		(0.059)	(0.027)
GUIDE*PVTV	**-**	**-0.219****	**-0.212****
		(0.036)	(0.039)
Average Annual N		703	648

The regression analyses attempt to mitigate the effect of "earnings warnings" guidance using two different approaches. The first approach (column three) excludes firm-years that have less than two management earnings forecasts. The second approach (column four) excludes firm-years that contain management forecasts that are all labeled as "earnings shortfall" by Value Line. *P* is the share price at time t when the firm value variables are constructed; *BV* is the book value per share; *PVAX* is the present value of forecasted one-year-ahead abnormal earnings; *PVTV* is the present value of all forecasted abnormal earnings beyond the one-year horizon. *GUIDE* is an indicator variable that equals one if the firm provides quarterly guidance and zero otherwise. The regressions are estimated yearly and the coefficients reported are the mean coefficients over the sample period (2000-2009) and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. The standard errors are adjusted for serial correlation using Newey-West methodology with one lag. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 15

Univariate Analysis of Differences in CAPM Beta and Earnings Properties between Guidance and Non-Guidance Firms

	Non-Guidance	Guidance	Difference	p-value
CAPM Beta	**1.094**	**1.120**	**-0.026*** **	**0.000**
Earnings Persistence	**0.891**	**0.888**	**0.003**	**0.986**
Earnings Growth				
Year 1 to Year 2	-0.152	-0.156	0.004	0.884
Year 2 to Year 3	-0.328	-0.150	-0.178***	0.000
Year 3 to Year 4	-0.082	-0.143	0.062**	0.019
Year 4 to Year 5	-0.190	-0.217	0.027	0.400
Average	**-0.188**	**-0.166**	**-0.021**	**0.717**

Beta is estimated using the capital asset pricing model (CAPM) over the past five years. Earnings persistence is captured by β_1 from the regression model: $Earn_{t+1} = \alpha_0 + \beta_1 Earn_t + \varepsilon_t$, where $Earn_{t+1}$ is earnings (Compustat item IB) at year t+1 and $Earn_t$ is earnings at year t. Earnings growth is measures the growth in earnings-per-share over the specified period. Average growth and average errors are the averages of each respective variable over the four years. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

TABLE 16

Propensity Score Logistic Regression Model

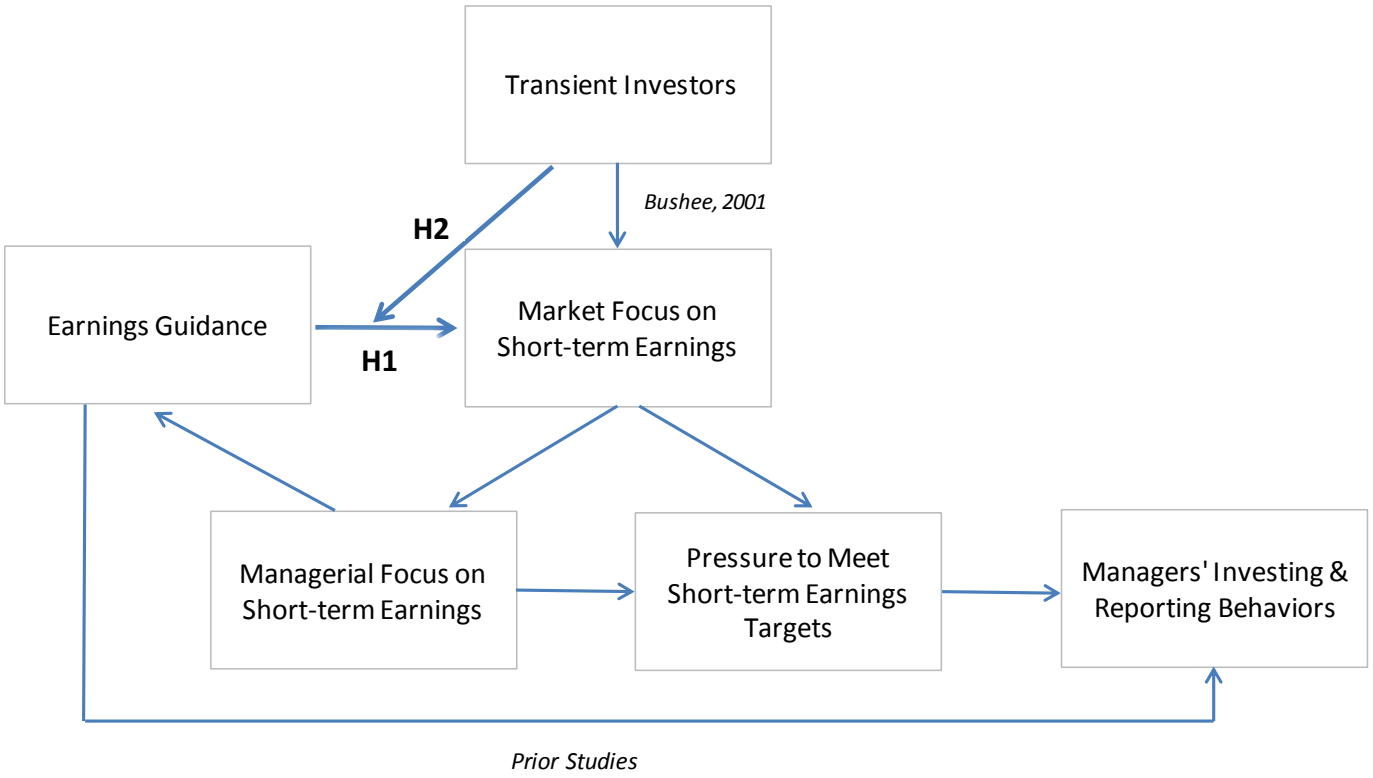
$$Prob\ (GUIDE_t = 1) = F(\gamma_0 + \gamma_1 SIZE_{t-1} + \gamma_2 M2B_{t-1} + \gamma_3 EARN\_STD_t + \gamma_4 NANALYSTS_{t-1} + \gamma_5 AF\_DISPER_{t-1} + \mu_t \quad (8)$$

Variable	Mean Coefficient
Intercept	1.327***
	(0.002)
SIZE	-0.105***
	(0.004)
M2B	0.012
	(0.842)
EARN_STD	-0.092**
	(0.033)
NANALYSTS	0.032***
	(0.000)
AF_DISPER	-1.211***
	(0.000)
Avg. Pseudo R-squared	0.094

The logistic regressions generate propensity scores for both guidance and non-guidance firms. Equation (8) is estimated yearly and the control firms are matched to the guidance firms based on the closest propensity score. $SIZE_{t-1}$ is the natural log of a firm's market capitalization at year t-1; $M2B_{t-1}$ is the natural log of a firm's market-to-book ratio at year t-1; $EARN\_STD_t$ is earnings volatility over the past 12 quarters, with a minimum of eight available quarters; $NANALYSTS_{t-1}$ is the number of analysts following the firm at the last quarter of year t-1; and *AF_DISPER* is analysts' forecast dispersion at the last quarter of year t-1. Since Value Line forecasts are made by one analyst, the variables – *NANALYSTS* and *AF_DISPER* – are calculated using the IBES data files. The coefficients reported are the mean coefficients over the sample period (2000-2009), and the *p*-values (in parentheses) are two-tailed and based on a standard error of the coefficients. *,**,*** indicate significance at the 10%, 5% and 1% level, respectively.

FIGURE 1

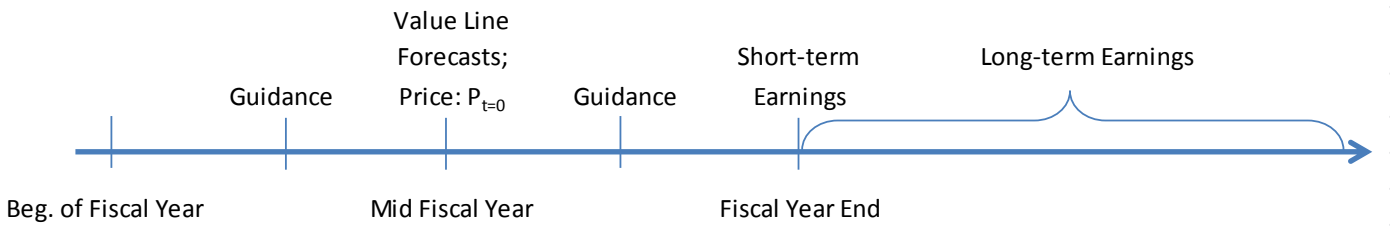
Focuses of This Study In Relation to Prior Studies



This figure is structurally based on Cheng, Subramanyam and Yang (2007). It illustrates the endogenous nature of earnings guidance and the focuses of this study in relation to related prior literature. H1 and H2 are the main hypotheses of this study. H1 tests the relation between earnings guidance and investor short-termism. H2 tests whether the relation is "moderated" by transient investors.

FIGURE 2

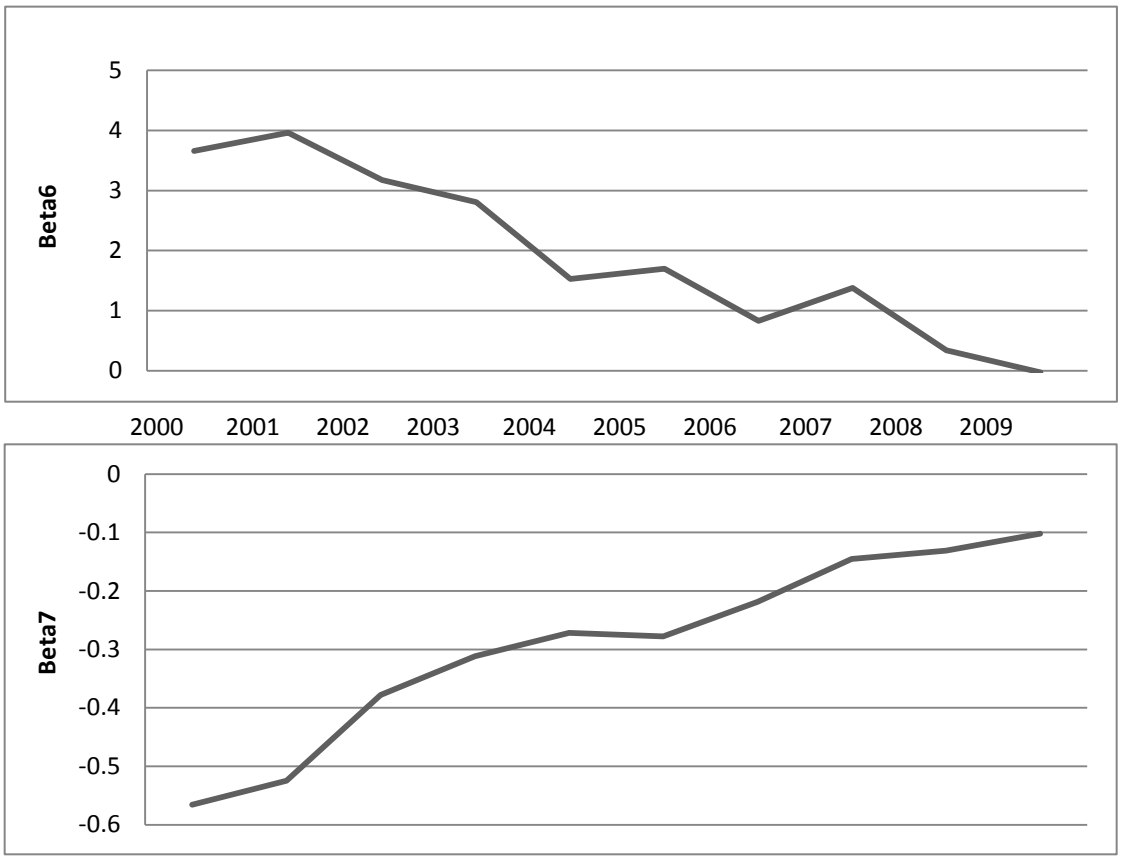
Timeline of Value Line Forecasts and Earnings Guidance



This timeline illustrates the approximate timing of Value Line analysts' forecasts in relation to management earnings guidance. Value Line analysts provide quarterly forecasts of key variables in this study. The second forecast report is chosen as the reference point (time t=0) and for constructing the firm value components. Specifically, Short-term Earnings are the forecasted earnings for the upcoming fiscal year, discounted to time t=0; and Long-term Earnings are the sum of forecasted earnings beyond the one-year horizon, discounted to time t=0. Value Line forecasts future earnings up to four years ahead, and the forecast of share price for the fourth year is used to proxy for all subsequent abnormal earnings.

FIGURE 3

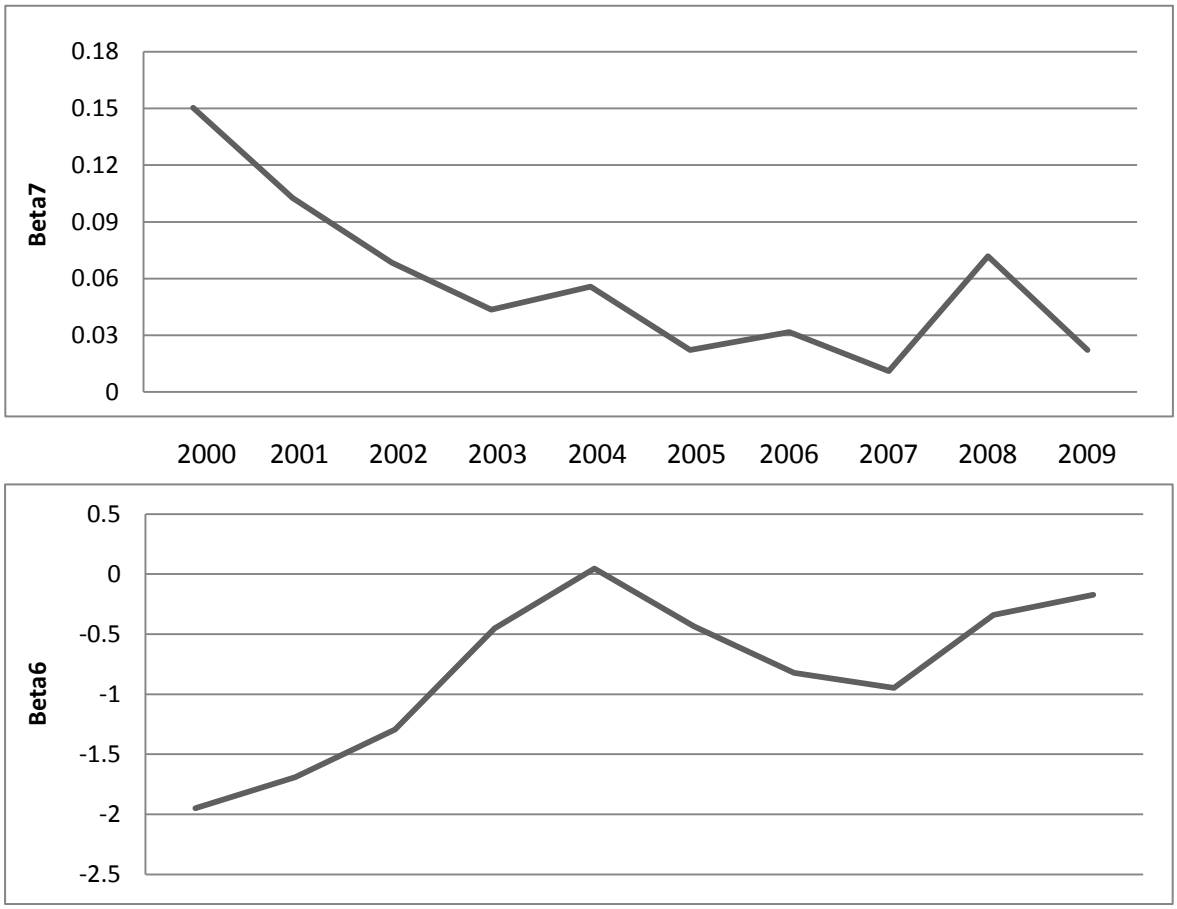
Temporal Trend of Differential Responses to Short-Term and Long-Term Components



This figure shows the temporal trend of over- and undervaluation of quarterly guidance firms documented in Table 4. The top graph presents the three-year moving averages of the differential response (b_6 from column 8 of Table 4) to the forecasted one-year-ahead abnormal earnings. The bottom graph presents the three-year moving average of the differential response (b_7 from column 8 of Table 4) to the forecasted abnormal earnings beyond one year ahead.

FIGURE 4

Temporal Trend of Association between Current Firm Value Components and Future Returns



This figure shows the temporal trend of the association between current firm value components of quarterly guidance firms and their one-year-ahead future returns. The top graph presents the three-year moving averages of the differential association (b_7 from column 5 of Table 9) between current long-term earnings and one-year-ahead abnormal returns. The bottom graph presents the three-year moving average of the differential association (b_6 from column 5 of Table 9) between current short-term earnings and one-year-ahead abnormal returns. The order of the graphs is reversed for the purpose of comparing with Figure 3.

Appendix

Definition of Variables

BV	=	Book value per share
PVAX	=	Present value of forecasted abnormal earnings over next year
PVTV	=	Present value of forecasted abnormal earnings beyond one-year-ahead
CAR	=	Cumulative monthly compounded size-adjusted abnormal returns
ALL_HOLD	=	Total shares held by all types of institutional investors, divided by total shares outstanding
TRA_HOLD	=	Total shares held by transient investors, divided by total shares outstanding
QIX_HOLD	=	Total shares held by quasi-index investors, divided by total shares outstanding
DED_HOLD	=	Total shares held by dedicated investors, divided by total shares outstanding
Inst_VOL	=	Shares traded by all types of institutional investors, divided by total shares outstanding
TRA_VOL	=	Shares traded by transient institutional investors, divided by total shares outstanding
QIX_VOL	=	Shares traded by quasi-index institutional investors, divided by total shares outstanding
DED_VOL	=	Shares traded by dedicated institutional investors, divided by total shares outstanding
EARN_STD	=	Earnings volatility, measured as the standard deviation of earnings (COMPUSTAT item IB) over the past 12 quarters, with a minimum of 8 quarters available
NANALYSTS	=	Number of analysts following from IBES database
AF_DISPER	=	IBES analysts forecast dispersion
SIZE	=	Natural log of market value of equity
M2B	=	Natural log of market-to-book ratio
GUIDE	=	An indicator variable that equals one if the firm provides quarterly or annual guidance and zero otherwise
POST	=	An indicator variable that equals one if the year is in the pre-guidance period and zero otherwise

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